









BRITISH MUSEUM.

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A GUIDE

TO THE

EXHIBITION ROOMS

OF THE

DEPARTMENTS OF

NATURAL HISTORY AND ANTIQUITIES.



PRINTED BY ORDER OF THE TRUSTEES.

1878.

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BRITISH MUSEUM.

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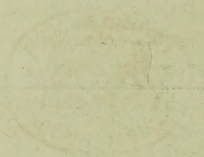
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BRITISH MUSEUM

A GUIDE

EXHIBITION ROOMS

NATURAL HISTORY AND ANTHROPOLOGY





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## GUIDE TO EXHIBITION ROOMS.

### DEPARTMENTS OF NATURAL HISTORY AND ANTIQUITIES.

THE present "Guide" gives a concise account of the contents of the exhibition rooms in the several departments of Zoology, Geology, Mineralogy, Botany, and Antiquities, in the British Museum, and is intended to supply such information as is necessary for the generality of visitors to the collections, in addition to that which is furnished by the labels attached to the various objects.

A Synopsis, which is to be published hereafter, will give a fuller description of these collections, accompanied by scientific and literary notes, and illustrated by wood-engravings.\*

J. WINTER JONES,

*Principal Librarian.*

BRITISH MUSEUM,

*May 1st, 1878.*

\* See the parts relating to the Egyptian Galleries, Vestibule (price 2*d.*); the First and Second Egyptian Rooms, and the Græco-Roman Sculptures (4*d.* each), the First Vase-Room (2*d.*), Second Vase-Room, Part I. (4*d.*), the Bronze Room (3*d.*), and the Select Greek Coins exhibited in Electrotpe in the Gold-Ornament Room (3*d.*), already published.

## ACCOUNT OF THE BRITISH MUSEUM.

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IN the year 1753 an Act of Parliament was passed (26 Geo. II. cap. 22), enacting that the collections formed by Sir Hans Sloane, as well as the Cottonian and Harleian collections of Manuscripts, should be vested in certain Trustees, and, together with such additions as might be made to them, placed in one general repository, to be there preserved for public use to all posterity. The Trustees were incorporated under the name of "Trustees of the BRITISH MUSEUM," with power to make such regulations as they might deem fit for the preservation and inspection of the collections, the care and custody of which were committed chiefly to the "Principal Librarian," who was to be continually aided in the execution of his duty by such officers as should be appointed for that purpose.

Montague House was purchased by the Trustees in 1754 for a general repository, and the collections were removed to it under the above Act of Parliament. On the 15th of January, 1759, the British Museum was opened for the inspection and use of the public. At first the Museum was divided into three departments, viz., Printed Books, Manuscripts, and Natural History; at the head of each of them was placed an officer designated an "Under Librarian."

The increase of the collections soon rendered it necessary to provide additional accommodation for them, Montague House proving insufficient. The present by George III. of Egyptian Antiquities, and the purchase of the Hamilton and Townley Antiquities, made it moreover imperative to create an additional department—that of Antiquities and Art—to which were united the Prints and Drawings, as well as the Medals and Coins, previously attached to the library of Printed Books and Manuscripts. The acquisition of the Elgin Marbles in 1816 made the Department of Antiquities of the highest importance, and increased room being indispensable for the exhibition of those marbles, a temporary shelter was prepared for them. This was the last addition to Montague House.

When, in 1823, the library collected by George III. was presented to the nation by George IV. it became necessary to erect a building fit to receive this valuable and extensive collection. It was then decided to have an entirely new edifice to contain the whole of the Museum collections, including the recently-acquired library. Sir R. Smirke was accordingly directed by the Trustees to prepare plans. The eastern side of the present structure was completed in 1828.



and the Royal Library was then placed in it. The northern, southern, and western sides of the building were subsequently added, and in 1845 the whole of Montague House and its additions had disappeared; while the increasing collections had rendered it necessary to make various additions to the original design of Sir R. Smirke, some of them even before it had been fully carried out. The most extensive addition, however, is that erected in the inner quadrangle under the superintendence of Mr. Sydney Smirke (who had some time previously succeeded his brother Sir Robert as architect to the Museum). This new building contains the Reading Room and accommodation for the future increase of the collection of Printed Books.\*

In 1827 a fifth department—that of Botany—was created, in consequence of the bequest by Sir Joseph Banks of his botanical collections (besides his library of about 16,000 volumes).

In 1837 the Prints and Drawings were separated from the Antiquities, and became an independent department, and at the same time the Department of Natural History was divided into two, one of Geology, including Palæontology and Mineralogy, the other of Zoology. In 1857 Mineralogy was constituted a separate department. In 1856 the office of Superintendent of the Natural History Departments was created. At the beginning of the year 1861, the Department of Antiquities was divided into three, viz., (1) Egyptian and other Oriental Antiquities with the Medieval and British Antiquities and Ethnography; (2) Greek and Roman Antiquities; and (3) Coins and Medals. In the year 1866 the British and Medieval Antiquities and Ethnography were separated from the Oriental Antiquities, and constituted an independent department; and in 1867 the Maps, Charts, Plans, and Topographical Drawings were separated from the Printed Books, and made to form a distinct department. The Museum at the present time is divided into twelve departments, viz., Printed Books; Maps, Charts, Plans, and Topographical Drawings; Manuscripts (with the sub-division "Oriental Manuscripts," placed under a separate keeper at the end of the year 1866); Prints and Drawings; Oriental Antiquities; Greek and Roman Antiquities; British and Medieval Antiquities, and Ethnography; Coins and Medals; Zoology; Geology; Mineralogy; and Botany: each department being under the care of an "Under Librarian" or Keeper.

Visitors proceed to the several rooms herein described from the entrance hall, on the western side of which is the principal staircase to the upper floor. Against the wall to the south of the staircase is a statue by Westmacott of the Hon. Mrs. Seymour Damer, holding in her hands a small figure of the genius of the Thames, sculptured by herself. By the side of this statue is the doorway to the sculpture galleries. On the eastern side of the Hall are two marble statues: Shakspeare by Roubilliac, and Sir Joseph Banks by Chantrey; between these is the doorway to the Grenville Library.

To inspect the several collections in the order in which they are described in the present Guide, the visitor will ascend to the upper floor

\* See the description of the Reading Room and Libraries, sold in the Museum, price one penny.

by the principal staircase, and enter the exhibition rooms of the Zoological Department. These rooms form part of the southern, the whole of the eastern and part of the northern sides of the upper floor. The Fossils and Minerals which are next described, are contained in the remaining part of the northern side. The Botanical exhibition is displayed in two rooms in the southern front of the building, which are entered from the Mammalia Saloon.

Following still the order of the Guide, the visitor will descend the principal stairs to the hall, and enter the Department of Antiquities by the doorway already mentioned, near the south-western angle. The antiquities occupy the whole of the western parts of the ground floor, several rooms connected therewith on the basement, and the western side of the upper floor.

Should visitors wish to proceed at once to any particular part of the exhibition, instead of following the course of the Guide, a reference to the plans of the two principal floors of the Museum prefixed to this work will enable them to do so.

In addition to the parts of the building already indicated, the Grenville room, the Manuscript Saloon, the Royal Library, and the Gold-Ornament Room are open to visitors on public days.

The entrance to the Grenville room is on the eastern side of the hall, under the clock. In this room is deposited the splendid library bequeathed to the nation in 1847 by the Right Hon. Thomas Grenville, a marble bust of whom, by Comolli, stands in a recess on the southern side. Here, as well as in the Royal library, are exhibited various printed books, selected to show the progress of the art of printing, with specimens of ornamental and curious binding.\* From the Grenville library the visitor proceeds to the Manuscript Saloon, where selections of manuscripts, charters, autographs, and seals are arranged for inspection.\* The visitor next enters the Royal library, and here, besides the printed books already mentioned, are exhibited some interesting and valuable specimens from the department of prints and drawings.\*

J. W. J.

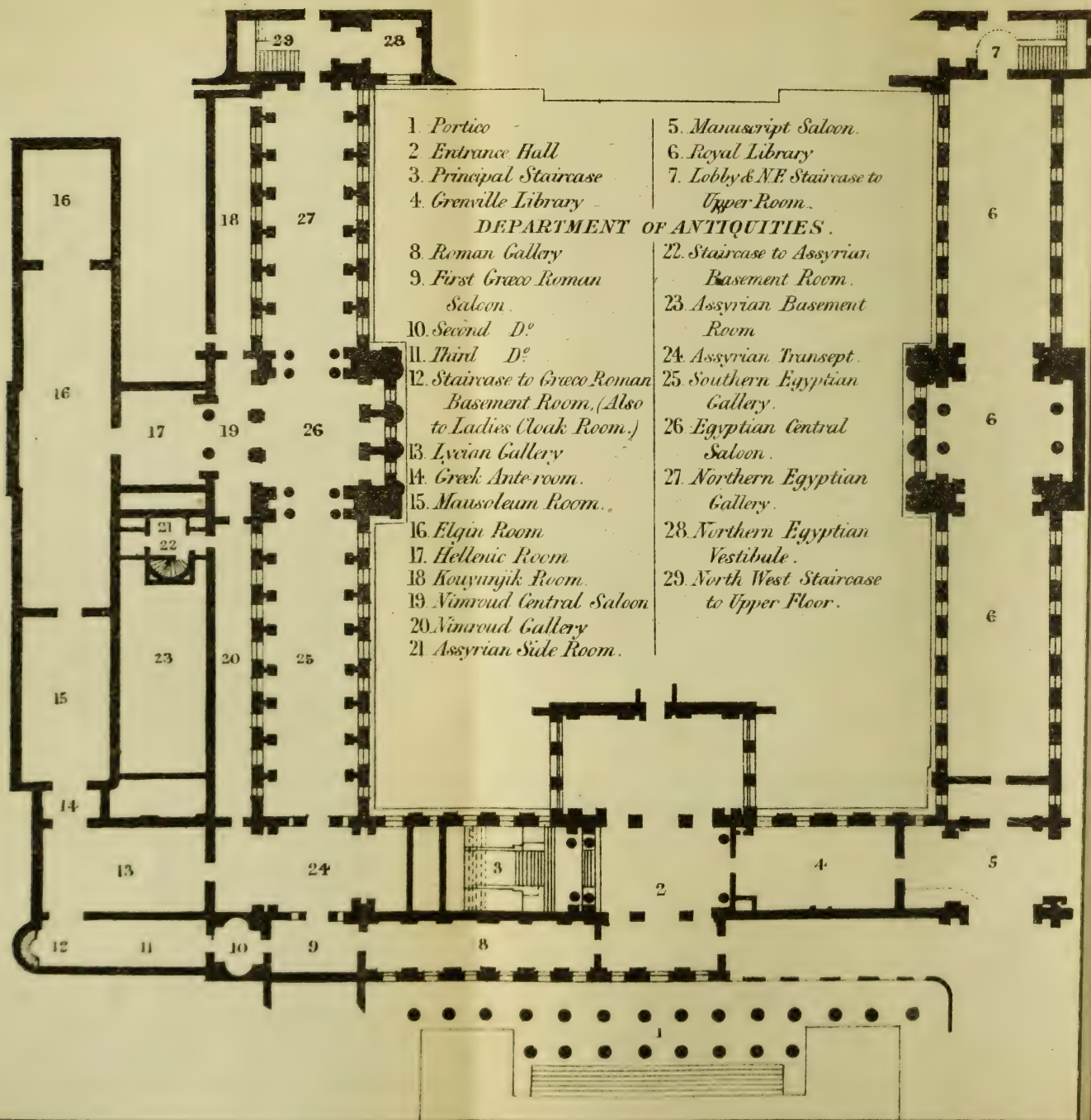
\* See the several Guides to these exhibitions, separately printed and sold in the Museum, price one penny and twopence each.





# BRITISH MUSEUM.

## *EXHIBITION ROOMS; GROUND FLOOR.*

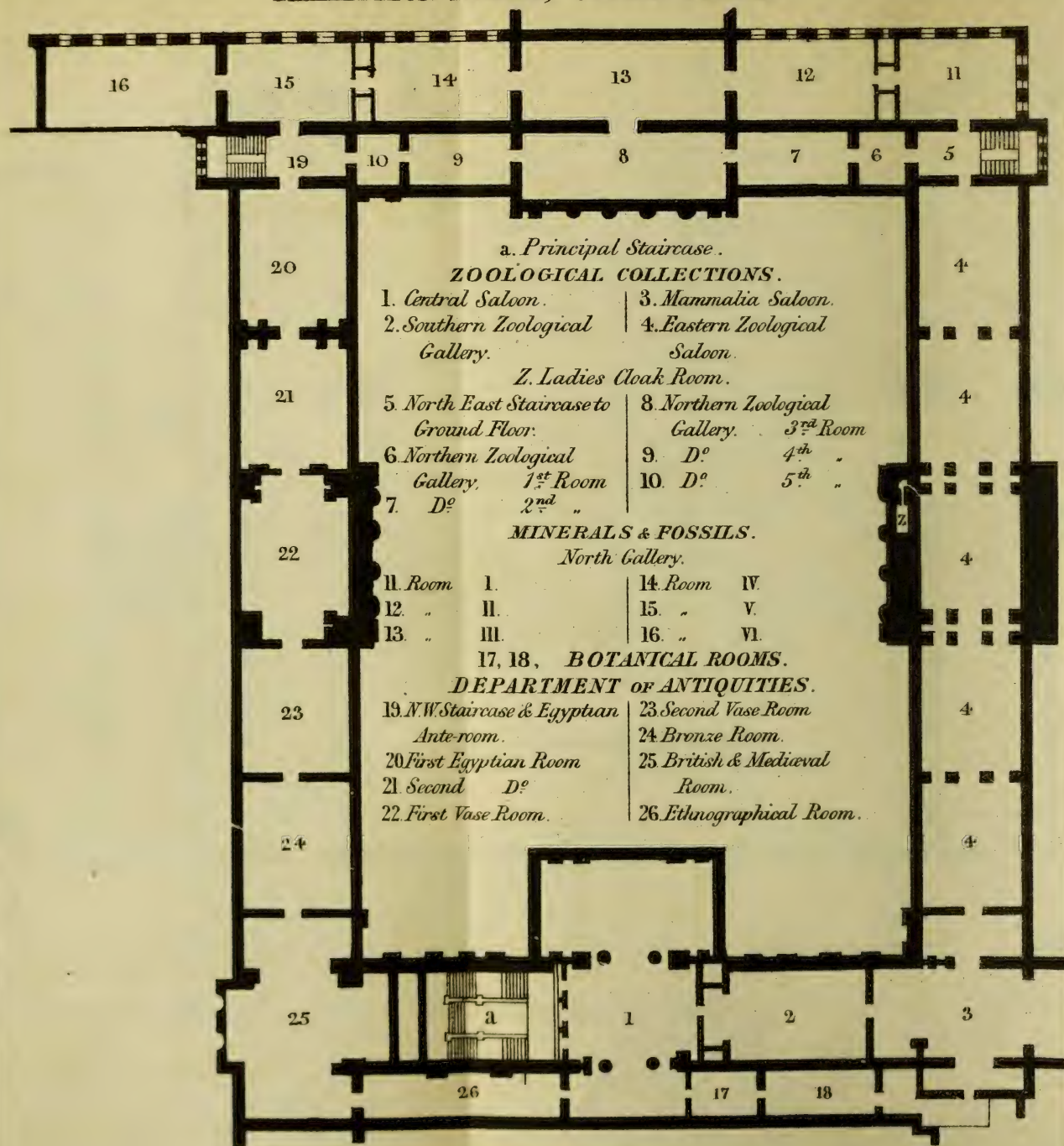






# BRITISH MUSEUM.

## EXHIBITION ROOMS, UPPER FLOOR.





## DEPARTMENT OF ZOOLOGY.

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THE collection of specimens selected for exhibition, from the existing classes of Animals, is contained in three Galleries; and, for the convenience of exhibition, is arranged in two series. The BEASTS, BIRDS, REPTILES, and FISHES, are exhibited in the Wall Cases. The hard parts of the Molluscs, Radiated, and Annulose Animals, (as SHELLS, CORALS, SEA-EGGS, STARFISH, CRUSTACEA, and INSECTS,) and the EGGS of BIRDS, are arranged in the Table Cases of the several Rooms.\*

The names and numbers of the Rooms are placed over the doorways in each apartment, and the numbers of the cases over the glass frames.

The specimens are labelled with the scientific name, the English name when they have one, the country whence they come, and, when they have been presented, with the name of the donor.

The General Collection of MAMMALS, or Beasts which suckle their young, is arranged in three Rooms, the Hoofed Beasts (*Ungulata*) being contained in the CENTRAL SALOON and SOUTHERN ZOOLOGICAL GALLERY, and the Beasts with claws (*Unguiculata*) in the MAMMALIA SALOON.

### 1. THE CENTRAL SALOON.

In the WALL CASES of this *Saloon* are exhibited the specimens of the Antelopes, Goats, and Sheep. The Cases between the doorways contain the Bats, or *Chiroptera*. Some of the larger Mammalia are placed on the floor, such as the Giraffes or Camelopards of Central and South Africa; the Morse or Walrus from the Arctic Ocean; the Indian Rhinoceros, with a single horn on the nose, and with its thick hide in deep folds: different species of the African Rhinoceros, all of

\* For a more detailed and scientific explanation of the Zoological Collection, there is published a series of Catalogues, which may be purchased in the Principal Librarian's Office at the Museum, or at any Bookseller's. A List of these Catalogues, with the prices, is at the end of this Guide.

which have two horns and a smooth hide, without any folds; several specimens of the Hippopotamus in different stages of growth; the Indian Elephant,\* which is easily tamed and, when domesticated, one of the most useful animals in its native country; a young specimen of the African Elephant, a species distinguished by its enormous ears; in ancient times tamed like the Indian species, it is now exposed to extermination on account of the great value of its tusks.—In two large glass-cases are shown stuffed specimens and skeletons of those Apes or Monkeys which, on the whole, are most like man, and therefore are named “Anthropoid Apes;” however, it will be perceived that their similarity to man is much greater during their early youth than at an advanced age. To this group of Monkeys belong the Gorilla and Chimpanzee, inhabitants of the forests of Western and Central Africa; and the two kinds of Orang from Borneo and Sumatra. These animals live chiefly on fruits, but possess an extraordinary strength, which they well know how to use when attacked.

Over the Cases containing the Antelopes and Bats are placed the horns of the different species of Oxen, the largest of which are those of the Arnee, or Great Indian Buffalo.

Cases 1-6 and 14-20. The Antelopes are beasts with hollow horns, chewing the cud; they are chiefly of a sandy colour, and specially fitted to inhabit extensive plains with tracts of desert; a few of the species live among rocks, where they are as sure-footed as the Goat. They are most abundant in Africa, especially in the southern districts. A few are found in India. Among the more interesting species may be pointed out the Water-buck, and Sable Antelope; the Oryx, which, when seen in profile, probably suggested the Unicorn mentioned by the ancients; the Blessbok, Hartebeest, and Sassybe of South Africa; the large-eyed Gazelle, so often referred to by Eastern poets; the Springbok, so called from its springing bounds, when the white fur of its back opens out like a sheet; the Gnu, which at first seems a compound of Horse, Buffalo, and Antelope; the Sasing, or Indian Antelope, with its curious cheek-pores; the Wood Antelopes, with short horns often concealed amongst a brush of hairs; the Chickara of India, with four little horns. (Case 12.) North America and Europe have each a single species, viz., the Prong-buck of the United States, and the Chamois which frequents the Alps. None of these hollow-horned animals shed their horns, except the Prong-buck, in which, periodically, a new pair of horns, covered with hairs, are formed below and within the old one.

The different kinds of Wild Sheep (Cases 9 to 11) from the mountains of Asia, North America, and North Africa: one of the most

\* At the top of the staircase, close to the entrance into this saloon, there are exhibited two skulls of the Indian Elephant: one of an adult animal, with fully developed tusks; the other of a younger individual, about eighteen years old, showing the succession of the grinding teeth. In the Elephant, only one grinding tooth at a time is in use on each side of each jaw. Whilst this is wearing out, another grinder is gradually formed behind the old tooth, to take its place when it is shed. The number of the teeth thus successively developed is limited to six.

remarkable is the Bearded Sheep, or Aoudad of Morocco, which has enormous strength in its neck and horns; these are of great size in the gigantic Argali of Northern Asia, and in the Wild Sheep of Central Asia (*Ovis poli*), which was discovered by the Venetian traveller, Marco Polo, in the thirteenth century, on the Great Pamir mountains, at an altitude of 16,000 feet. The largest pair of horns exhibited, measures 56 inches in a straight line from tip to tip.

The various kinds of Ibex and Wild Goats of Siberia, India, and Europe, and some of their domestic varieties (Cases 6 to 8 and 13); the Cashmere and Angora Goats, celebrated for the delicate wool growing among their hair, and manufactured into the finest shawls.

The Giraffes are fitted, by their long legs and neck, and extensile lips and tongue, to browse on the twigs of high trees; while the Antelopes, Goats, and Sheep, with their short neck and blunt lips, browse chiefly on low shrubs, or graze.

The Bats, which have the skin extended between the fingers of their fore-limbs, fly about in the dusk and at night; they feed chiefly upon insects; some of the larger species, often called *Fox-bats*, or *Flying Foxes*, have blunt grinding teeth, and eat fruit only. They are found in Africa, in the islands of the Indian Archipelago and the Pacific, and in Australia, where some of them live in large flocks. The *Horse-shoe Bats* and *Leaf-nosed Bats* have very peculiar physiognomies, from the complicated apparatus on the skin of the nose round the nostrils. Though the Bats are generally sombre-coloured, yet a few have brilliantly-coloured furs, such as the little orange Port Essington Bat, and some of the Fox-bats. The Vampyres, or Blood-sucking Bats, are confined to South America; they have a long tongue, and a deep notch in the lower lip. They attack animals and sometimes even men while sleeping, fanning the victims with their wings. They are of small size, but the wounds which they inflict often continue to bleed after the Bats are satiated, and do not readily heal.

## 2. THE SOUTHERN ZOOLOGICAL GALLERY.

In the WALL CASES of this Gallery is exhibited the continuation of the collection of the Hoofed Quadrupeds, as the Oxen, Elands, Deer, Camels, Llamas, Horses, and the various species of Swine. Here also are placed the species of Armadillo, Manis, and Sloth, remarkable for the length and strength of their claws. On the top of the Wall Cases are the horns of various species of Antelopes, Goats, and Sheep. The four corners of the floor are occupied by specimens of the Wild Cattle and Buffaloes of Europe, Africa and Asia; by the Eland, the largest kind of Antelopes acclimatized in England and Ireland; by the Elk, the most bulky species of Deer, inhabiting North America and some districts of North Eastern Europe.

In the centre of this Gallery has been placed a magnificent specimen of the Basking Shark (*Selache maxima*), captured on March 2nd, 1875, near Shanklin, in the Isle of Wight. It measures 28 feet



in length, and 13 feet in its greatest circumference. This Shark is an inhabitant of the Northern parts of the Atlantic Ocean, and approaches annually the West Coast of Ireland, rarely straying to the coasts of England and Scotland. It is of a harmless disposition, its food consisting of small fishes and other marine animals swimming in shoals. On the West Coast of Ireland it is chased for the sake of the oil which is extracted from the liver, one fish yielding from a ton to a ton and a half. However, its capture is attended with great danger, as one blow from its enormously strong tail is sufficient to stave in the sides of a large boat.

Cases 1 and 2, 31 and 32. The Llamas, used as beasts of burden in the Andes of South America, one species furnishing an excellent wool. The wild species are brown, while the domesticated kinds are black, white, or brown, and often variegated. The Camels, remarkable for their stomachs complicated with cells for holding water, and for their humps, which are stores of nutriment, whereby they are fitted for long journeys across the desert.

Cases 3 to 16. Oxen. Among them may be specified the Lithuanian Bison, or Aurochs, which in ancient times inhabited the European forests, but is now nearly extinct, a few only having been preserved by the care of the Russian Emperors; the American Bison, or "Buffalo," which still wanders in gradually diminishing herds over the prairies of North America; the Yak of Thibet, the tail of which is used as a fly-flap by the Asiatics, and the curious Nepalese Budorcas.

Of the Musk Ox (*Ovibos moschatus*) or rather Musk Sheep, several specimens obtained during the Arctic Expeditions are exhibited. One of them, a bull about four years old, was killed during the last Arctic Expedition on the shores of Grinnell Land, in lat.  $82^{\circ} 27'$ , within a mile of the winter quarters of H.M.S. *Alert* (6th of July, 1876). This animal inhabits the polar regions of the Western Hemisphere, between the 60th and 83rd parallels of latitude, and is found in herds of from ten to thirty. It is surprising that so large an animal should be able to subsist during the long Arctic winter on the scanty vegetation of those regions. When fat, his flesh is well flavoured, but lean animals smell strongly of musk. Notwithstanding the shortness of its legs, the Musk Ox runs fast and climbs rocks and precipices with as great ease as a Wild Sheep, to which it is more nearly allied than to the Ox Tribe.

The continuation of the series of Antelopes, such as the Bontebok, with its inscribed sides; the fine striped Strepsiceros, with spiral horns; the Nylghau, often called the Horned Horse of India; and the Anoa of Celebes. In these Cases are also contained some others of the Thick-skinned Beasts, as Baird's Tapir of Central America; the African Swine, with warts on the head, and formidable tusks; the Babyrussa, with recurved horn-like tusks; the social South American Peccaries, with a gland on their back, emitting a foetid odour. All these animals have muscular and callous noses, which fit them well for grubbing in the ground. The curious Hyrax, one of the species

of which is the Coney of Scripture: in structure it resembles a diminutive Rhinoceros. The Shielded Beasts, as the Manis, or Scaly Ant-eaters of India and Africa, with very long claws, which are turned in when they walk; the burrowing Armadilloes of South America, which, when danger threatens, can roll themselves into a ball, covered with jointed mail, whence they have derived their name. The Aard Vark, or Ground Pig of South Africa, which burrows in ant-hills. The Ant-eaters of South America, which are covered with hair, and have a very long worm-like tongue, which they exert into ant-hills, and, when covered with ants, draw into their mouths. The Porcupine Ant-eater, or Echidna of Australia, and the Duck-billed Platypus of the same country, called Water Mole by the colonists, as it burrows in the banks of streams, and is a good swimmer. The Sloths of South America, peculiarly organized for a forest life; living entirely among trees, and crawling along the under side of the branches.

Cases 17-30 contain the Deer, Musks, and Horses. In the Deer the horns, which, except in the Reindeer, are confined to the males, are solid and annually shed and reproduced. The Stag and Fallow Deer of Europe, the large Wapiti of North America, the Reindeer and Elk of Northern Europe and America, the Rusa and spotted Axis of India, and the Brazilian Coassus. The Musks, with their peculiar fur and musk bag, are hornless, and have large canine teeth.

The Horse tribe with solid hoofs, such as the Quagga, and the finely-banded Zebras of South Africa; the wild Asses of Asia.

### 3. MAMMALIA SALOON.

In the WALL CASES of this SALOON are arranged the specimens of Four-handed, Rapacious, Glirine, and Pouched Beasts, and over the Cases are the different kinds of Seals, Manatees, and Porpoises; and arranged in Table Cases are the general collections of Corals.

In the central eastern division of this Saloon, suspended from the roof, is the skeleton of a Whale from New Zealand (*Balæna australis*), a species as important to commerce as the Right Whale of the Northern Hemisphere; it is a young individual, not quite half grown. Further, a skeleton of the Bottle-nosed Dolphin (*Delphinus tursio*), of which a large shoal was taken near Holyhead in 1866; of the Narwhal (*Monodon monoceros*), one of the most singular animals of the whale-tribe, distinguished by a long spirally-twisted tusk, which projects from the snout in the line of the animal's body. This tusk is developed on one side of the snout only (the left), very rarely on both sides. In the adult male it reaches a length of six or eight feet, but is seldom developed in the female; hence it is probable, that its use is the same as that of the antlers in the stag. The ivory of the tusk commands a high price in the market, and was still more valued in former times, when it was believed to be the horn of the Unicorn. The Narwhal is an inhabitant of the Arctic Seas, and rarely strays to more temperate regions.

Cases 1-20. The Primates or Four-handed Beasts, exclusively natives

among trees. They are often called *Quadrumanæ*, from their four extremities having, in most cases, a thumb opposed to the other toes, so that they are able to lay hold, as it were, with four hands.

Cases 1-13<sup>a</sup>. The Monkeys of the Old World are chiefly distinguished by the very narrow division between their nostrils. The Gorilla, Chimpanzee, and Orangs have been mentioned above. The Gibbons are distinguished by their long fore-arms. The *Semnopithecæ*, *Cercopithecæ*, and *Colobæ* of the Old World are Monkeys with long tails; one of the most remarkable is the Proboscis Monkey of Borneo, with its singular long nose; here also may be noticed the *Entellus*, or Sacred Monkey of the Hindoos, which is religiously preserved about their sacred enclosures; the Douc, with its finely-contrasted colours; and the *Colobæ*, so called from their fore-hands wanting the thumb; of these the most handsome is the Abyssinian *Guereza*, with long white hairs flowing over its sides and with the white tail contrasting strongly with the deep black fur. The skin of this Monkey is used to ornament the shields of the Abyssinian Chiefs. The Barbary Ape has been introduced on the rock of Gibraltar, and is the only Monkey found in Europe. The Black Wandaroo, with its grey wig, is a conspicuous species found in Ceylon and Southern India.

The Baboons have elongated muzzles, somewhat like dogs, hence their names of *Cynocephali* or Dog-heads. They are natives of Africa; the most conspicuous are the *Chacma*, *Anubis*, the *Tartarin*, frequently represented on the Egyptian monuments, and the *Mandrill* or *Rib-nosed Baboon*, from West Africa, one of the specimens being the identical "Happy Jerry," which used to amuse the visitors at Old Exeter Change.

Cases 13<sup>b</sup>-18 contain the American Monkeys, distinguished by the broad space between their nostrils, and by their tails being generally prehensile, which assists them in climbing. The Spider Monkeys have very long legs, and want the thumb of the fore-hand. The Howlers are so called from the loud cries which they utter at night. This howling sound is produced in a large, peculiar bony chamber, connected with the larynx, and giving a goitred appearance to their throat. Some of these Monkeys have their bodies covered with long hair, whilst others are distinguished by a very bushy beard. The *Ouistiti* *Marmozets* and little Silky Lion Monkey are noticeable for their delicate beauty; the *Douroucoulis*, with its large eyes and Loris-like aspect, is strictly nocturnal.

Cases 19 and 20 contain the Lemurs and Loris. The Lemurs take the place of Monkeys in Madagascar, and are handsome soft-furred animals with convolute tails. They live in trees, and feed on birds, insects and fruits. Some of the finest and most remarkable species are exhibited in separate cases in the Eastern Zoological Gallery. The Loris are East Indian animals, with large eyes; they sleep all day, and are very active at night. The Flying Lemurs, or *Colugos*, have the fore and hind legs connected by an expanded skin, which acts as a parachute, supporting them when leaping from branch



of the warmer parts of the globe, and particularly organized for a life to branch. They live on trees in the Indian Archipelago, and suspend themselves by their feet to the branches, back downwards, thus forming a kind of hammock in which they nurse their young.

Cases 21-51 contain the Carnivorous Quadrupeds, distinguished by the sharpness and trenchant form of some of their molars, the tubercles projecting from others, and the large size of the canine teeth. They are particularly organized to feed on flesh; most of them catch and kill their prey. The Cats, or Feline Animals, with retractile claws; the Lion of Africa and Asia; the striped Tiger of India; the spotted Leopards of Africa and Asia, at home among trees; the fierce Jaguar of South America; the long-tailed Ounce with its thick fur, found even among the snows of the Himalaya. The sharp-eyed Lynx with tufted ears; the Cheetah, or Hunting Leopard, trained in India to bring down game, and for that purpose carried hoodwinked, till an Antelope or other game is in sight, when, on the blinders being removed, the Cheetah pursues and springs on the animal.

Cases 30 and 31. The Hyænas, noted for their extreme voracity, and the loud howling they make at night; they feed chiefly on carrion.

Case 32. The Civets, which secrete in a pouch a peculiar substance used as perfume. The Genets, Lingsang, Bassaris, and Ichneumons prey upon the smaller quadrupeds and birds, and are fond of sucking the eggs of reptiles and birds. The Surikate is readily tamed. Cases 37-42. The Dogs which walk with the claws exposed: the Wolves hunting their prey in packs; the Jackals wandering about at night and feeding on carrion. The Foxes, with sharp muzzles and bushy tails: one species is found in the Arctic regions, which turns white in winter. The African Otocyon and Fennec, with their enormous ears. Of the Dogs, one of the most interesting is the Esquimaux Dog, indispensable to the Arctic tribes during their long journeys over the snow. Case 43. The Weasels, well adapted by their slenderness to creep into holes where they find their prey. Some of the best furs are derived from this tribe; in Siberia and North America, the Sable and Ermine are regularly trapped during the winter for their skins. Case 44. The Wolverine, a very astute and ferocious animal, said to master even the large Elk, on which it drops from an overhanging branch of a tree; the Cape Ratel, whose favourite food is honey, in getting which it shows a peculiar instinct; the Badgers, very strong creatures living in holes which they dig in the ground; the Skunks deriving their name (*Mephitis*) from the odious smell which they emit when provoked: they are natives of America.

Case 45. The Otters, with short webbed feet and long bodies, inhabit rivers and lakes, and live on fish; the skin of the American Sea Otter is greatly valued as a fur.

Cases 45-50. The Bears are named Plantigrade from walking on the soles of their feet, unlike the Dogs, which are Digitigrade, or walk on their toes. Bears are more frugivorous than carnivorous; but the Polar Bear, the tyrant of the Arctic seas, lives chiefly on seals

and fish. The tropical Bears have generally short fur and long tongues. Most of the Bears can climb well, and balance themselves on the hind legs with ease. The American Raccoon has been called Lotor, or the Washer, from its habit of dipping its food in water before eating it. Cases 51-52. The Coati, with its long snout, which is used for grubbing in the ground; the Ailurus of Nepal, one of the most brilliantly coloured of quadrupeds. Here are placed the Insectivora, such as the Moles, with their strange fore-feet used for digging; the Golden Moles of South Africa, with iridescent fur, so rare among the Mammalia; the Tenrecs of Madagascar and the Mauritius, which sleep during the intense heats of summer; the Hedgehogs; the Ptilocercus of Borneo, with long feathered tail; the Tupaia of Java; the long-nosed Elephant-shrews of Africa; the little sharp-nosed Shrews which live on insects and worms; the Gymnura of Malacca, the largest of the group.

Cases 53-64. The various kinds of Marsupial Animals, so called from the pouch in which the young are nurtured; they are only found in Australasia and America: among them may be noticed the Petauri or Flying Phalangers; the Cuscus, natives of New Guinea and the adjacent islands, with prehensile tails; the dwarf Opossum Mouse and curious-footed Tarsipes of King George's Sound. The Koala, called by the Australian colonists *the Monkey*; the Phalangers; the Kangaroos, with large tails and long hind legs, useful to them in their flying leaps; the Rock Kangaroo, and the Tree Kangaroo. The Bettongia, one of which makes a curious nest; the tail-less burrowing Wombat with its thick skull; the Dasyure or Australian Devil, and the voracious Tasmanian Wolf, which worries the sheep of the colonist; the pretty-banded Myrmecobius. The Opossums of the New World, some of which feign death, and the little Philander, the young of which climb on their mother's back and are carried by her with their tails round that of the parent.

Case 65. The Seals, the furs of which are used in making articles of dress. The Harp Seal and Southern Sea-bear may be noticed.

Cases 66-81 contain the Glires, or Gnawing animals, the majority of which are small-sized. Amongst the more remarkable may be indicated the Capybara of America, the largest of the group, almost as aquatic in its habits as the trowel-tailed Beaver, which is still found in North America, but very rare in Europe; the Coypu and Ondatra, whose furs are used in manufactures. Cases 70-72. The Porcupines, formidably armed with quills. Some of these live among trees and have long prehensile tails. Cases 71, 72, The Agoutis and Pacas, representing the Hares in the New World. Cases 73-75. The Hares. Case 76. The Jerboas, some of which take flying leaps; the Peruvian Chinchilla, with its delicate fur; the Dormice. Cases 77-80. The Squirrels, with their long bushy tails, chiefly living among trees; the Flying Squirrels, which can vault from tree to tree, assisted by the expansion of the skin of the sides. The Marmots, which pass the winter in a lethargic state; the Mole Rats and Sand Moles burrow in the ground and feed on roots; the Pouched Rats of North America,

which have large cheek pouches, wherein they store their food to carry it to their burrows.

On the tops of the Cases and suspended on the walls, are arranged specimens of Seals, of Porpoises and Dolphins, and of the Manatees of Jamaica and Western Africa: most of these mammalia live in the sea; a few in estuaries or rivers. Some of the Seals are much valued for their skins and oil. Among the Dolphin family may be noticed the curious Platanista, or long-beaked Dolphin of the Ganges (on the top of Case 79).

The GENERAL COLLECTION OF CORALS is exemplified by selections arranged in the Table Cases. Tables 1-20 contain the various kinds of Madrepores or Star Corals, as the Sea Mushroom; the Brainstone; the Clove Coral; the Millepore. On the floor is a large mass of one of the corals which forms reefs in the sea, so dangerous to ships. Tables 20-31. The Barbed Corals; the Red Coral of commerce; the Gorgonia or Sea Fans; the Sea-pens, some of which emit a bright phosphorescent light.

A large square glass-shade\* in the middle passage of the room contains a series of "Barbed Corals," selected on account of the exquisite delicacy of their structure, most closely resembling the growth of various trees and shrubs.

Some of the most interesting Sponges are exhibited in upright cases at the top of the table-cases. What is preserved of these creatures, is a kind of skeleton formed by a network of siliceous filaments or spicules. The soft substance of the Sponge, which is spread over this skeleton, is generally lost; or, if preserved, shrunk into a very thin layer or bark. Case M, over Table-Case 25, contains a series of the so called "Glass-rope-coral," from Japan and the Coast of Portugal (*Hyalonema*), a Sponge which emits from its bottom part a long bundle of siliceous fibres twisted like a rope; with the aid of this rope it retains its hold in the soft mud at the bottom of the ocean, as with a root. The Japanese detach this rope from the Sponge, and manufacture spurious specimens of natural history, examples of which are also exhibited.

Case D over Table-Case 8, contains specimens of the most beautiful Sponges known at present (*Euplectella* and *Meyerina*). Their skeleton consists of a network delicate like lace, and the name "Venus Flower Baskets" has been given to them. They are found in the neighbourhood of Cebu, an island in the Philippine Archipelago. Examples of the "Birds'-nest Sponges" (*Holtenia* and *Crateromorpha*), from the Atlantic and Indian Oceans, are also exhibited in this Case.

Opposite to this case, a magnificent specimen of a fibrous sponge, called "Neptune's Trumpet" (*Luffaria archeri*), more than five feet in length, is exhibited. It was discovered at Ambergris Island on the coast of Yucatan, and presented to the British Museum by Surgeon-Major Samuel Archer.

\* It is placed behind the marble bust of Dr. John Edward Gray, for many years Keeper of the Zoological Department.



## EASTERN ZOOLOGICAL GALLERY.

The *Wall Cases* contain the general collection of BIRDS; the larger *Table Cases* contain the collection of SHELLS of Molluscous animals; on the top of the Wall Cases is a series of horns of different kinds of Deer and Rhinoceros.

The Wall Cases on the west side of the room, or to the left on entering from the Mammalia Saloon, contain (1-26) the diurnal and nocturnal Birds of Prey. Cases 27-42 contain the wide-gaped (fissirostral) Perching Birds; Cases 43-47, the slender-billed or tenuirostral Birds; Cases 48-61, the tooth-billed (denti-rostral) Passerine Birds; Cases 62-73, the strong-billed Conirostral Birds; Cases 74-83, the climbing or Scansorial Birds. These are all on the west side of the room.

On the east side of the room, Cases 84-106 contain the Gallinaeous Birds; Cases 107-134, the Wading Birds; and Cases 135-166 the Web-footed Birds.

Cases 1-26. Diurnal Birds of Prey. Some of the most interesting species are, the Condor, or Great Vulture of the Andes, which soars higher than any other bird; the Turkey Buzzards, or Carrion Vultures, which clear away putrifying carcases, and are the most useful scavengers in the warmer parts of America; the Eagles, the most formidable of which are the Harpy of South America and the Wedge-tailed Eagle of Australia; the Kites; the true Falcons, which are the most courageous, in proportion to their size, of all the Birds of Prey, and some of which are used in Falconry; the Secretary Bird of South Africa, with its long legs, which kills venomous snakes, and derives its name from the plumes, like pens, on the side of the head. These obtain their food during the day.

Of the nocturnal Birds of Prey, may be noticed the great Hawk and Eagle Owls; the Snowy Owl of North Europe and America. The long feathers of the eared Owls must assist in collecting the slightest sound; the birds themselves glide noiselessly through the air.

Cases 36-83. The Perching Birds, divided into five great sections. Of the wide-gaped section, Cases 36, 37, may be specified the Goatsuckers, which fly about at night, and live on moths and beetles; the Trinidad Goatsucker, or Fat-bird, is found in caves in South America; the fat of the young is used in cookery. The Leona Goatsucker of West Africa, with very long feathers appended to its wings, so that it looks like three birds when it flies. Case 38 contains the Swallows and Swifts, which pursue flies on the wing; their wings and tail are very long, their legs very short. The Esculent Swallow constructs its nest of a substance which when dissolved in soups is esteemed a great luxury in China and elsewhere in the East. Case 39. The Todies, Rollers, Broadbills, and Motmots, living chiefly on insects and fruits; the plumage of many of these is very showy. Case 40. The Trogons, living in low damp woods in the tropics, particularly of the New World; one of the most conspicuous is the long-feathered Quezal, a sacred bird

of the ancient Peruvians. Cases 41, 42. The Kingfishers, large-billed birds with short tails, living on fish, insects, and other small animals, are generally of bright plumage. One of the largest and most sombre-coloured is the Laughing Kingfisher of Australia, which lives on snakes and reptiles; the colonists call it the Jackass, from its loud and singular note. Case 43. Among the Tenuirostral Birds may be noticed the Hoopoes and Sunbirds of Africa and Asia; the latter have brilliant metallic plumage, and have often been taken for Humming-birds; they feed on the nectar of flowers and on insects which they find in the tubes of flowers. Case 44 contains the true Humming-birds, peculiar to America. The males are of the most resplendent colours. Among the finest may be mentioned the topaz, garnet-throated, tufted-necked and racquet-tailed Humming-birds. The beak in some of the species is of enormous length, in most it is straight or bent down, in a few it is turned up. Their food consists of minute insects and the honey of flowers. They fly with a humming noise, and never settle on the ground.

Case 45. The Honey-eaters, peculiar to Australia and New Zealand. They have curiously-feathered tongues, which assist them in sipping their food. Cases 46, 47. The Creepers, Nuthatches, and Wrens, most of which can creep up and down trees, their long hind claws taking a firm grasp of any inequality in the bark. The Nuthatches have great strength in the beak, in this respect resembling Woodpeckers, and, like them, tapping on trees. Cases 48-61. The tooth-billed Passerine Birds feed chiefly on insects and grubs. Case 48. The Tailor-birds, forming curious nests of leaves, which they stitch together; the superb warblers and Emu Wren of Australia, and the Lyre-bird or *Mænura* of Australia, the largest of song birds. Case 49. The Warblers, birds of plain plumage, but famed for their agreeable song; the Black-cap and Nightingale are placed here. Case 50. The Wheatears and Titmice; the latter are very active in flitting from branch to branch and suspending themselves in all kinds of attitudes whilst seeking for insects on trees. Case 51. The American Wood Warblers. Cases 53-55. The Thrushes: some of these have long legs and short tails, such as the tropical Ant-Thrushes; many have brilliant plumage; others of more sombre plumage inhabit Europe and the temperate parts of the world, and are famed for their powers of song. Cases 56, 57. The Flycatchers, so named from their feeding on insects which they capture when flying. The Tyrants of North and South America pursue and catch small birds as well as insects. One of the most curious is the King Tody of South America, with a finely coloured and peculiar radiated crest on its head. Cases 58, 59. The Chatterers: many of these are of beautiful plumage and feed on berries and insects; remarkable among them is the white Chatterer of the American forests, called the Campanero, or Bell-bird, from its note resembling the convent bell. Case 59-61. Shrikes and Butcher birds: many of these impale insects and small birds on thorns, and hence their name; some of the Drongos, or Indian forked-tailed Shrikes, have great powers of song.

Cases 62-73. The Conirostral Passerine Birds feed chiefly on grain and fruit, but may be called omnivorous. The Crows and Jays; the curious bare-necked Grakles of South America; the gorgeous Birds of Paradise from New Guinea and the adjoining islands, to which they prove a considerable source of revenue. Selections of the finest specimens of the Birds of Paradise have separate glazed cases allotted to them. Case 65. The metallic-plumed shining Thrushes; the satin Bower Bird of Australia forms a bower of twigs, which it adorns with feathers and strews with bones and stones, using it as a place to play in. The Oxpickers of Africa with their strong beaks pick grubs out of the skin of oxen and other beasts.

Case 67. The yellow and black Orioles, some of which, like the Cuckoos and Cowpen Bunting of North America, lay their eggs in the nests of other birds. Case 68. The Weavers of Africa and Asia, so named from the elegant nests they weave with dried grasses: some of these live in great colonies with the nests under one great cover; the Grosbeaks, particularly the thick-billed Ground-sparrow of the Galapagos. Case 69. The Tanagers of the New World, remarkable for the gay plumage of the males. Case 70. The Finches and Buntings, living chiefly on seeds; the Larks, with the hind claw long and straight; the Crossbills, with the points of the beak crossing each other and giving them great power in tearing pine-cones to pieces to get at the seeds; the Colies of Africa and India, which sleep in companies, suspended by one foot; the African Plantain-eaters. Cases 72, 73. The Hornbills, with their enormous beaks: the females when incubating are imprisoned in the nest (which is placed in the hollow of a tree) and fed by the male.

Cases 74-83. The Scansorial Birds, powerful graspers from the arrangement of the toes, two before and two behind. The long-tailed Brazilian Macaws with naked cheeks; the Australian Parakeets; the Cockatoos; the New Zealand Strigops with its owl-like aspect; and the red and blue Lories of the Indian Archipelago. Case 77. The Toucans of the New World, with large beaks; one of the most curious is the curl-crested species. Cases 78-80. The Woodpeckers, with their wedge-shaped beaks and bristly-pointed tails; they live on insects and larvæ, which they extract from trees, by pecking with their strong chisel-like beaks, and then inserting their long extensile tongues. The species are most numerous in America and Asia. Cases 81-83. The Cuckoos. Many of these deposit their eggs in the nests of other birds, which sit upon them and rear the young; the Honey-guides of South Africa are so called from guiding the natives to the nests of wild bees; the Golden Cuckoos of South Africa have brilliant metallic green and purple plumage; the Anis are black birds, found in South America and the West Indies. They are very fond of warmth, and live on insects.

On the East side of the room, in Cases 84-106, are placed the Gallinaceous Birds, beginning with the Pigeons, Cases 84-88; the most conspicuous of these are—the Victoria and great Crowned Pigeons of the East Indian Islands; the Nutmeg Pigeons, feeding on aromatic



fruits; the *Didunculus*, from the Navigator Islands, now very rare, being nearly exterminated by the introduction of the cat into those islands; the Bronze-winged Pigeons of Australia; and a Pigeon which has a red spot on the breast, as if it had been shot there with an arrow, and the blood had oozed out. Unlike the other Gallinaceæ, the Pigeons when hatched are bare, and require to be fed by their parents.

On the table cases opposite these, in glazed cases, are the Showy Fruit-eating Pigeons from New Guinea and the South Sea Islands.

Cases 89, 90. The Curassows of South America, some of them with curious crests and knobs on their beak.

Cases 91-93. The Peacocks and Argus Pheasants of Asia and its islands; the rare Crossoptilon from Thibet, and the many-spurred Polyplectrons, with their fine eye-like spots. Case 95. The Monaul, or Impeyan Pheasants, found on the high mountains of India, where they live on bulbous roots, which they dig up with their large beaks. Cases 94, 95. The Pheasants: the most conspicuous are Lady Amherst's Pheasant from Thibet, and the long-tailed Reeves's Pheasant from China. A separate Glass-Case contains a remarkable cross between the Golden and Lady Amherst's Pheasants, more gorgeous in color, than either of the parents. Cases 96-99. The Wild Fowls, which are inhabitants of the Asiatic jungles and woods; the Fire-backed Pheasant, and the Horned Pheasants of North India, with their fine painted faces. Cases 99, 100. Turkeys and Guinea-fowl; the most conspicuous is the Ocellated Turkey of Honduras and Vulturine Pintado. Cases 101-103. The Partridges and Quails; some of the American species have been acclimatized in England; they subsist on seeds chiefly. Cases 104, 105. The Grouse: some inhabiting snowy regions, change their plumage in autumn to snow-white. The Sandgrouse, with their ochrey plumage, inhabit the deserts of the Old World. One species, the *Syrrhaptes paradoxus*, an inhabitant of Central Asia, has suddenly appeared in large numbers in Europe, and several small flocks have reached England, where they have been observed for three consecutive years. Case 106. Sheathbills and Tinamous of the New World. The Megapodius group, including the Brush Turkey of Australia, make large mounds of decaying vegetable substances, in which the eggs are deposited, and are hatched by the heat of the fermenting mass.

Cases 107-109. The Ostrich, Emeus, and Cassowaries, the largest of recent birds, incapable of flight, but noted for their powers of running. In Case 108 are specimens of the Apteryx, wingless birds of New Zealand, sleeping during the day, and feeding at night on worms and insects. Cast of the egg of the *Æpyornis maximus*, a fossil gigantic bird, from Madagascar. Opposite the upright case 108, are placed three glass cases containing skeletons and other remains of three birds which, incapable of flight, formerly were found in abundance in certain uninhabited islands, but which became extinct soon after their home had been discovered and invaded by man. The most celebrated is the *Dodo* from Mauritius, a gigantic pigeon: with its skeleton are exhibited a foot, belonging to a specimen which was

formerly contained in Tradescant's Museum at Lambeth, and also various models of head, skulls, and bones of the foot. An oil-painting of this remarkable bird is hung in the wall-case 108, which is said to have been made from a living bird, brought from the Mauritius. The selection of bones of the Dodo, shown in a small case on the right side of the skeleton, as well as the skeleton, were obtained from a turbary in the island mentioned. The two skeletons in the case on the right side of the Dodo represent a male and female of the *Solitaire* (*Pezophaps solitarius*) from Rodriguez, a small island situated about three hundred miles to the east of Mauritius. Like the Dodo, the Solitaire was a flightless pigeon, but less bulky, and of a more slender build. Although the wings were too weak and quite useless for the purpose of flight, they were armed at the wrist joint with a large bony excrescence (at least in the male), and these birds appear to have used them in their combats very much in the same manner as our common pigeons. The skeletons were discovered by one of the naturalists accompanying the Transit of Venus Expedition in 1874, and presented by the Royal Society of London.

The case on the left side of the Dodo contains the remains of a gigantic flightless Goose from New Zealand (*Cnemidornis calcitrans*). Like the pigeons of the Muscarenes, it became extinct within a very recent period.

Cases 110, 111, 112. The Bustards and Coursers, quick running birds, inhabitants of the barren parts of Europe, Africa, Asia, and Australia, where they feed on grain, herbage, worms, and insects. Cases 113-134. The Wading Birds, generally provided with long legs. Cases 113, 114. The Plovers, Turnstones, and Oyster-catchers; the last are so named because they are said to open bivalve shells with their bills, to feed on the contents. Case 114. The Trumpeters of South America; one of these is employed to guard poultry from the attacks of hawks. Cases 115-117. The Cranes found on the borders of rivers and marshes, feeding on insects and seeds; the fine-crested Egrets, with their delicate white plumes; the Bitterns and Night-Herons; the wide-beaked Boatbill and Spoonbills; the Demoiselles, so named from their graceful and elegant motions.

Facing Wall Case 123, a small Case is placed, containing a group of Knots (*Tringa canutus*) with their young. This bird is a kind of Sandpiper, distributed in the winter season over the greater part of the Old World, and common during the autumn migration on the south coast of England. Its breeding-home has been discovered quite recently during the Arctic Exhibition, when the specimens here exhibited were procured (4th of June, 1876). Cases 124, 125. The Storks and Ibises; the Ethiopian Ibis, the mummies of which were preserved by the ancient Egyptians; the *Baleniceps* of the Upper Nile, which is enabled by its powerful beak to feed on hard-scaled fishes and tortoises. Cases 127-129. The Godwits, Sandpipers, and Phalaropes; the Avocets, with their very long legs, and upturned or recurved bills; the long-legged Plover, which seems to walk on stilts. Case 130. The Snipes, which feed among marshes; the Painted

Snipes of India. Case 131. The Jacanas, with their long toes, enabling them to walk with ease over the floating leaves of water plants; the Screamers of South America, with spurs on their shoulders. Case 132. The Rails. Cases 133, 134. The Gallinules, which live on the borders of rivers and lakes, and are excellent swimmers. A pair of Coots (*Fulica atra*) with nest and a full complement of eggs, are exhibited in a separate case opposite to Wall Case 126. In a glazed case, one of the most notable, as it is the rarest, is the *Notornis mantelli* of New Zealand, now nearly extinct. Case 134. The Finfoots of South America and West Africa have curiously lobed feet, and dive like the Grebes.

Cases 135-166. The Web-footed Birds. Case 135. The Flamingos, the longest-legged birds of the group. Ancient epicures regarded their tongues as a most luxurious dish. Cases 136-139. The Geese, such as the Spur-winged Geese, so named from the spurs with which the wings are armed; the Geese feed chiefly on grass and other herbage. Cases 140, 141. The Swans, with their long and graceful neck; the Black Swans of Australia, giving the names to one of the districts; the Black-necked Swan of Chili, acclimatized in Europe. Cases 142-148. The Ducks: some of these, as the Sea Ducks, Cases 146-148, have a fin to the hind toe; the spinous-tailed Ducks are found in the warmer parts of the world; the pink-headed is a rare and curious species. Case 149. The Mergansers, natives of the arctic regions, feeding on fish. Cases 150, 151. The Divers, so named from their powers of diving, greatly owing to the backward position of their legs; the Grebes have often curious tufts of feathers about their heads. Cases 151-154. The Auks, oceanic birds, found within the Arctic and Antarctic Circles, where they dive after fish and crustaceans on which they feed; they use their scaly wings as oars: the Great Auk (*Alca impennis*) now extinct. The skeleton of this bird on the adjoining Table Case was obtained from a guano-mound in a small island near Newfoundland. Case 154. The Sea Parrots and Guillemots, building on the ledges of precipices overhanging the sea. The Penguins, as the "Emperor," from the Antarctic Regions, and the "King" from the Falkland Islands, both of which are noticeable as being the largest and most singular of the aquatic birds. Cases 155-159. The Petrels and Gulls, marine birds, feeding on fish and other marine creatures; the Albatross has the greatest extent of wing of any bird, and the most wonderful powers of sustained flight. The Stormy Petrels seem to run on the water, and often feed in the wake of ships. Case 160. The Terns or Sea Swallows, birds of great powers of wing; the Skimmers have curious razor-like bills, the upper mandible being the shortest. Case 161. The Tropic Birds, so called from their presence being a sure sign to the sailor that he has passed the tropics. The Darters or Snake Birds have small heads and long necks; they dart into rivers, and spear fish with their sharp bills. Cases 162-166. The Pelicans, Cormorants, and Frigate Birds, some of which have large pouches under their beaks, in which they hold the fish which they catch.



The SHELLS of MOLLUSCOUS ANIMALS are placed in the larger Table Cases across the sides of the room.\*

Tables 1-20. The Gastropods, like the Whelk and Snail, which creep by means of a fleshy surface projecting from the under part of the body and called the foot, and have comb-like gills. Some of the more marked are the Cones, such as the rare "Glory of the Sea," from the Philippine Islands; the animals of these kill their food by means of poisonous teeth implanted in their beak. Tables 3-13. The Trunk-bearing Mollusca, which, with the hard teeth in their long proboscis, make perforations in other shells and extract their contents; the Olives, Harps, Persian Carpets, Turnip shells, Mitres, Volutes, and Date shells; the Helmet shells, used in making artificial Cameos; the Wentletrap or Staircase shells, once celebrated among collectors for their rarity. The Violet shells, which float on the ocean and, like the Murice, emit a purple fluid which has been used as a dye. Tables 14-20. The Rostrum-bearing Mollusca, with a long muzzle with tentacles on the sides; as the Apple Snails, which live in ponds in warm climates; the Cowries—one kind is extensively used in place of small coin in Africa. These all crawl on a broad expanded foot. In Tables 19, 20 are the Strombs and Carrier-shells, which have a compressed foot for leaping. The Carrier-shell has the peculiarity of attaching to the outer surface, as it increases in size, stones, fragments of other shells, coral and other marine substances, and has been called "the Conchologist" and "the Mineralogist," according as shells or minerals preponderated.

Tables 21-25. The Scutibranchous Mollusca, the gills of which consist of lamellæ, forming one or two series on the back of the neck or on the under edge of the mantle round the foot; such as the Trochidæ, the Haliotidæ or Earshells with their pearly lustre; the Fissurellæ or Keyhole limpets; the Limpets with their simple conical shells, and the many-valved Chitons, which have a series of eight shelly pieces or "valves" down the back of the animal.

Tables 25-30. The Heterobranchous Gastropods, with variously-formed respiratory organs. The Bullidæ are placed here, with their curious strong gizzards; the Bubble shells, the Aplysia or Sea Hare, which feeds on sea-weeds and discharges a deep purple fluid when danger approaches; the Helicidæ, or Snails and other allied families, which live on land and have cylindrical retractile tentacles.

Tables 31-48. The Bivalve shells or Conchifera; the animal of these is enclosed between two shelly valves, united by a ligament. Tables 31-38 contain the Siphonophora, which have the mantle closed behind, and furnished with two apertures, the lower for the admission, and the upper for the emission, of the water from the mantle cavity. Some of these, as the Veneridæ and other families, crawl on a compressed foot, while the Cockles have an elongated foot, angularly bent in the middle, and fitted for leaping. Near these, but with a small rudimentary byssiferous foot, are the Tridacnæ, one of

\* Models of the animals of most of the families are arranged in the Cases along with the shells.

which (the *T. gigas*), when full grown, is the largest and heaviest of shells, some of them weighing more than 300 pounds. The Pholadacea, or Boring shells, live sunk perpendicularly in holes in rocks, or in sand. Tables 39-48 contain the Asiphonophora, which have the mantle-leaves free, and sometimes a separate single siphonal opening, for the emission of the water, as the Mussels and Oysters, many of which secrete pearls; the brightly-coloured Spondyli, or "Thorny Oysters," with their rough, foliated or spiny shells, and the thin Placunæ, or "Cake-Oysters," which are semi-transparent.

In Table 49-50 are shells of the Mollusca which have no distinct foot on the under side of the body, and which either live attached to marine bodies (*Brachiopoda*), or float on the surface of the sea (*Pteropoda*), or walk on their heads (*Cephalopoda*). The Pteropoda have an expanded fin on each side of the small foot. Of these the Limacina and Clio are so abundant in the Arctic Seas as to form a great part of the food of the whale. The animals of Cephalopods (of which the Cuttlefish is an example) have eight, ten, or many strong and elongated arms round the mouth of their large and distinct head, on which they crawl: the mouth is armed with large beak-like jaws. Their eyes are large, and their back is generally supported with a horny blade, sometimes strengthened with a shelly coat, as the cuttle bone. They have a secretion of a deep black colour, which they emit when in danger, and thus conceal themselves. They are very voracious creatures. The female of the Paper Nautilus (*Argonauta*) fabricates a delicate symmetrical shell, in which she lays her eggs, and thus protects them. Both sexes of the Pearly Nautilus form a shell for their protection, one portion of which is divided into chambers. Some of the extinct chambered shells, as the Ammonite, are placed with the Nautilus Shell in Table 50.

In some of the side Table Cases there are—a series of specimens exhibiting the structures, diseases, deformities, and reparations of shells, such as the distorted variety of the common Garden Snail, described as *Helix cornucopiæ*; a series of the eggs and egg-cases of Molluscs; a series of specimens exhibiting the shells used for commercial purposes, such as the cameos, mother-of-pearl, gloves made from the byssus of the Pinna, the Chank shells carved by the natives of India and used in their temples. In another Case are specimens of the various kinds of Sea Slugs (*Holothuriæ*); in China and the East Indian Archipelago they are sold as articles of food, under the name of Tre-pang.

Some of the rarest examples of small quadrupeds are exhibited on the Table Cases. The stuffed specimen of the Aye-aye of Madagascar shows its large ears, the slender middle finger of the fore-hand, and the thick thumb of the hind-hand. The skeleton of the same animal shows the strong curved chisel-shaped front teeth: with these the Aye-aye gnaws down to the burrows of wood-eating grubs, and with its slender hooked finger extracts them. It is nocturnal, arboreal, and is guided to its favourite food by its acute sense of hearing. Also the curious Chlamydephorus and its singularly formed skeleton from

Chili, and various specimens of *Propithecus* and other *Lemuridæ* (see p. 6) from Madagascar.

## THE NORTHERN ZOOLOGICAL GALLERY.

### FIRST ROOM.

At the entrance into this gallery is placed a specimen of a Gigantic Land Tortoise (*Testudo elephantina*). This kind is found in Aldabra only, a small uninhabited island in the Indian Ocean, north-west of Madagascar. Formerly found in great abundance, it is now nearly extinct, the majority of the specimens having been captured by the crews of passing vessels, so that a few only remain. The specimen exhibited is a male, which weighed 870 pounds, and although known to have been more than 80 years old, was still growing at the time of its death.

The WALL CASES 1-8 contain a collection of Nests of Wasps and Bees; some are constructed of clay, or of sand, while others are of paper, made of an admixture of the scrapings of wood and vegetable fibre. Specimens of the various insect fabricators of these structures are in many instances attached to the nests. Case 6 contains the remains of the square lintel of a door of one of the government offices in St. Helena, showing the destruction caused by a species of White Ant. In Case 8, a series of the different stages of development, and of the products of the Japanese Silk-moths, prepared and set up in Japan, is exhibited. Cases 9-16 contain a collection of the Nests of Birds; among the more noticeable are the playing avenues of the Australian Bower Birds, the pendulous nests of the American Orioles, and the gelatinous nests of the Esculent Swallow; and that of the San Geronimo Swallow, which is a long pendulous tube formed entirely of the seed of a plant, secured together by the saliva of the bird; the hollow for the eggs is at the top, inside the tube; the bird has placed a false entrance on the side to deceive its enemies. Various nests of Humming Birds, Honeyeaters, Tailor Bird and Lyre-tailed *Menura*, are also shown. The Table Cases 1-8 contain specimens illustrative of the various changes of Insects, their nests and structures; the cocoon of the gigantic Goliath Beetle of Western Africa, the clay nests of various species of White Ants, the various Vegetable Galls, and a series of the nests of Spiders; among these the nests of the Trap-door Spider, and a remarkable flat web, constructed by an Australian species, are shown here. On the walls are suspended some specimens of the large gigantic Land-Tortoises which once inhabited in large numbers the Galapagos and the islands of Mauritius, Rodriguez, and Aldabra. They formed a very important article of food to navigators in the seventeenth and eighteenth centuries during the protracted and tedious voyages across the Indian and Pacific Oceans, but are now almost extinct.



## SECOND ROOM.

The WALL CASES contain the stuffed exotic REPTILES and BATRACHIA; in the Table Cases are contained the hard parts of the RADIATED ANIMALS, including the SEA-EGGS, SEA-STARs, and ENCRINITES.

The Wall Cases 1-8 contain the LIZARDS; exemplified by the Monitors or Varanus of Africa, India, and Australia; the Heloderms of Mexico, which have grooves in the back of the teeth like the poison-fangs of serpents; the Safeguards, large lizards of the tropical parts of America. The Tuatera (*Hatteria*), the largest reptile of New Zealand, nearly extinct. The Scincs (Case 5), generally small, and polished: some have distinct and strong legs, and others only traces of them; in the Blind Worms the bones of the legs are hid under the skin. Case 6, 7. The Guanas, many of which are highly esteemed as food, are natives of America, and, like the Chameleons, have the power of rapidly changing their colour; the large lizards from the Galapagos Islands, one of which feeds on sea-weeds; the diminutive Dragons of India, with the skin of their sides expanded upon long slender ribs, in the form of wings, which spread out and support the creatures as they leap from branch to branch. In Case 8 is the Moloch of Australia, covered with large spines. The Chlamydosaurus, or frilled Lizard of North Australia, with a large folded frill round its neck, like a Queen Elizabeth's ruff, which it can elevate when excited. The Chameleons of Africa and India, celebrated for the rapidity with which they change their colours; they feed on insects, which they catch by protruding their long tongue; only a small part of the eye is visible, the rest being covered with skin; the eyes move independently of each other.

Cases 9-13. SNAKES or SERPENTS. Case 9. The Poisonous Serpents, such as the Rattle-snakes of the New World, which have a rattle at the end of the tail; this rattle is formed of a series of hard horny joints, fitting loosely one into another, which the animal can shake at pleasure; the Vipers, such as the Adder, the only venomous reptile of the British Islands; the Puff-adders of Africa, so named from their power of inflating their bodies when irritated. Cases 10, 11. The Boas, with rudiments of legs; they are not venomous, and kill their prey by constriction, twisting the end of their prehensile tail round a tree, and thus increasing their power over the animal when encircled by the folds of their body; their gape is enormous. A large specimen of the Anaconda (*Boa murina*) commonly, but not quite correctly, called Boa constrictor, is exhibited in a separate case in the middle of the room. It is a native of the hottest parts of South America, where it lives on the banks of rivers and lakes watching for its prey, which consists chiefly in animals coming to the water to drink. The specimen exhibited is 29 feet long; but this kind grows to a still larger size, and is undoubtedly the largest kind of snakes in existence. It has been mounted in the act of seizing a Pekkary, but

it would have been able to overpower and swallow an animal of twice or thrice that size. Case 13. The Colubrine Snakes, many of which have poison-fangs, such as the Sea-snakes found in the seas of Asia and Australia; the Coral Snakes, banded with black and red rings; the Cobra Snakes, which can dilate the skin of the neck so as to form a kind of hood behind the head; they are the snakes used by the Indian jugglers, who carefully extract the poison-fangs before using them in the performances. The Tree Snakes called, from the great length of their bodies, the Coachwhip Snakes; one kind has the nose much produced.

Cases 14-22. The TORTOISES and TURTLES. Cases 14, 15. The Land Tortoises living on vegetable substances. Some of the largest kinds of this tribe have been mentioned above (*p.* 18). Specimens of the singular Abingdon Tortoise (*Testudo abingdonii*) are exhibited in this room; they come from Abingdon Island (Galapagoes Archipelago), where they were quite recently discovered by Commodore Cookson, of H.M.S. *Petrel*. Their shell is so thin as to be easily pierced by a knife. Cases 16-19. The Fresh-water Tortoises living on animal food; some of these cannot withdraw their heads into the cavity of the shell like the other Tortoises. Cases 20-22. The Three-clawed Terrapins living in the rivers of Africa, Asia, and America; they are carnivorous, and eat their food in the water. The Marine Turtles live in the ocean, feeding chiefly on sea-weeds and shell-fish; these include the Green Turtle, the fat of which is so much relished by the gourmand; the imbricated Turtle, which furnishes the "tortoise shell."

Cases 22-25. The CROCODILES and AMPHISBÆNAS. The Crocodiles and Alligators drown their prey before devouring it; the Alligators are only found in America; the Crocodiles in Australia, India, Africa, and America; the Gavial, or long-beaked Crocodile, is peculiar to India, and feeds chiefly on fishes, for taking which its long and slender snout and sharp teeth are well adapted. The Amphisbænas are so called from both ends being nearly equally blunt, which has led to the idea that they could move backwards or forwards with equal ease.

Case 26. The BATRACHIA, such as the Toads, Frogs, and Efts; the Tree-frogs can walk on polished surfaces, and over the smoothest leaves; the Bull-frogs of America, so called from their loud bellowing noise; the horned Frogs of Brazil; the Pipa of Brazil, which transfers the eggs into cells on the back of the female, where they are hatched, passing through the form of the tadpole, and escaping as a perfect animal after a certain period; the great Salamander from Japan, the Siren of Carolina, which looks like an eel, with front legs—it is a truly amphibious animal, with lungs and gills; as is the Proteus of the caves of Carniola, which is here further exemplified by a wax model, to show its appearance when alive; the coral-coloured appendages to the head are the gills.

The Table Cases (1 to 10) contain the Echini, or Sea-eggs, such as the Club-spined Echinus and the Tessellated Echinus; the spines readily fall off when the animal is dead. Tables 7, 8. Sea-Pancakes,

so depressed that there scarcely appears to be any room for their internal organs. Many Echini are found in a fossil state, particularly in the chalk. Tables 11-18. The Star-fish, some with five and others with many rays; the rays are easily reproduced when broken or injured. Tables 19-23. The Lizard-tailed Star-fish throw off the ends of their rays when they are handled or put into fresh water. Table 23. The Gorgon's Head, with its many branches, somewhat resembling the Medusa's Head of Mythology. Table 24. The Comatula, or Sea-Wigs, the living representatives of the Encrinites found so abundantly in some rocks. There is a recent Encrinite from the West Indies in a small case at the side of the doorway, and another under a glass-shade on one of the Table-cases.

### THE THIRD ROOM CONTAINS THE BRITISH ZOOLOGICAL COLLECTION

The WALL CASES hold the Vertebrate Animals; the larger species, such as the Whales, Sharks, Tunny, Sturgeon and Skeleton of Sword fish, &c., are suspended on the Walls, or placed on the top of the Cases.

The TABLE CASES contain the Eggs of the Birds; a series of British Annulose Animals, to illustrate the arrangement of the British Insects, Spiders and Crabs; the Collections of the Shells and external skeletons of British Molluscous and Radiated Animals.

Several large skeletons of fishes are exhibited on the top of the table cases, viz.: the skull of the Sea-Devil or Angler (*Lophius*); a perfect skeleton of the Hake, remarkable by the extraordinary dilatation of the lateral processes of the vertebræ; and skeletons of the Cod, Carp, and Maigre (*Sciæna aquila*). Particularly deserving of notice is a young specimen of the Basking Shark (See p. 3), captured near Lowestoft; and a full-grown Fox Shark or Thresher (*Alopias vulpes*). This Shark is common round the British Coasts, in the Atlantic and Mediterranean, as well as on the coasts of California and New Zealand; it attains a length of thirteen feet, and feeds chiefly on Herrings, Pilchards, and Sprats; it uses its extremely long tail in splashing the surface of the water, whilst it swims in gradually decreasing circles round a shoal of fish which are thus kept together and caught by the shark in great numbers. Also stuffed examples of a gigantic Sea-Perch from the African coast, which is known to attack bathers, and of a very large Cat-fish from the Upper Amazons, are temporarily exhibited here.

Some table cases are fitted up for the reception of instructive examples of Salmonoids; for instance, a large male Salmon in the highest condition from the Tay; its weight was forty-six pounds. Another male Salmon after spawning, from Ireland; this fish was found in an exhausted condition. A male Salmon from Denmark; on dissection it proved to be a sterile fish. Male and female of the Sea-Trout (*S. trutta*) from the Tweed. Other specimens of British Salmonoids are exhibited in the wall cases: large examples of the



common Trout from the Thames (*S. fario*), weight twelve and fourteen pounds; of the Gillaroo from Ireland, and of the Great Lake Trout (*S. ferox*); of the Sewin of Wales, and of the Sea- or Bull-Trout (*S. trutta*).

In the Wall Cases 1-9 are the British MAMMALIA. Cases 10-30 contain the BIRDS. Among these is a specimen of the Great Auk, a species, which has now become extinct; in the bottom of the Case is a Collection of the Nests of the smaller British Birds. Case 31. The British REPTILES. Cases 31-43. The British FISHES; the rare *Ausonia cuvieri*, found once only on the English coast, has recently been added; the Opah or King-fish (*Lampris*), one of the most delicious fishes, is represented by a full-grown example and by a skeleton, showing the enormous development of the shoulder-bones.

#### FOURTH ROOM.

The WALL CASES round the Room contain the stuffed collection of Bony Fishes. The TABLE CASES contain a selected series of Annulose Animals, to exhibit their systematic arrangement.

Wall Cases 1-12 contain the SPINY-RAYED Fishes, that is, those which have numerous spines in the fin on the back, like the Perch. They are found in the sea as well as in fresh water, and form many very distinct groups. Cases 1-3. The common Fresh-water Perch of Europe and North America (*Perca*); the Bass of Europe, North America, Africa, India, and Australia (*Labrax*, *Lates*); the Pike-Perch (*Lucioperca*), celebrated for its delicious flesh; the numerous Sea-Perches (*Serranus*, *Mesoprion*, *Pristipoma*). Case 4: the various kinds of Sea-Breams, some of which attain a weight of fifty pounds, all being esteemed as food; the Red Mulletts (*Mullus*). Case 5 contains the Chætodons, beautifully coloured during life, and swarming between the corals of the tropical seas; several kinds of *Chilodactylus*, one of the most important fishes on the Cape of Good Hope and in other parts of the South Pacific, where large quantities are dried for exportation. Case 6: the Gurnards (*Trigla*), the Flying Gurnards (*Dactylopterus*). Case 7: the Maigre Tribe (*Sciaenidæ*), most of which are of very large size and edible; the air-bladder of some of the Indian kinds yields isinglass, and one (*Pogonias chromis*) is the Drum-fish of the Americans, producing musical sounds under water; the Tribe of the *Polynemidæ*, easily recognized by the long filaments behind the head; one of the best sorts of isinglass is obtained from their air-bladder; the Barracudas (*Sphyrænidæ*), armed with formidable teeth; the flesh of some of the West Indian species is poisonous; also several of the more important Food-fishes of Tasmania. Cases 8-10: the tribe of *Trichiuridæ*, all rapacious fish, with a long body like the Barracudas; one kind (*Thyrsites*) is celebrated for the excellent flavour of its flesh, and much esteemed at Madeira and in the West Indies; the species found at the Cape forms an article of export; and another kind is one of the principal food-fishes of Tasmania. The Mackarel and Horse-mackarel Tribes, found all over the globe; to these

belong the Mackarel, Tunny, Bonite, the Sucker (*Echeneis*), which attaches itself by means of a sucker on the head to ships, sharks, turtles, etc., the John Dorees (*Zeus*), the Dolphins (*Coryphæna*), the Pilot (*Naukrates*), which follows in the wake of ships along with sharks, the Horse-mackarels (*Caranx*), with a very great variety of different kinds. Case 11 contains the head of one of the largest fishes of this group (a *Serranus*); it is from the Seychelle Islands, where it is known as "Vieille"; some kinds of Angler or Sea-Devil (*Lophius*); the Wolf-fish (*Anarrhichas*), which is nothing but a very large Blenny, and able to crush the hardest shells with its flat, pavement-like teeth on the sides of the jaws; the Herring-kings (*Trachypterus*, *Regalecus*), long, band-like fishes, with a silvery, scaleless body, and red fins; specimens have been found some twenty feet in length, and were mistaken for "sea-serpents;" they inhabit the greatest depths of the oceans, and when, by some accident, they come to the surface of the water, their muscles have lost all power, and they float, unable to escape. Case 12 contains the Surgeon-fishes (*Acanthurus*) of the West Indies and other parts of the Tropics, armed with one or several lancet-like spines on the side of the tail; the grey Mulletts (*Mugil*); and a gigantic example of the Pipe-fish (*Fistularia*).

Wall Cases 13-14 contain the ROCK-FISH or WRASSES, which also have numerous spines in the fin of the back, but are provided with thick lips, and with a triangular plate of teeth in the gullet. Those living in the sea are distinguished by their vivid changeable colours; some of them are called Parrot-fishes (*Scarus*, *Pseudoscarus*), from their bony jaws, which resemble a parrot's beak, and with which they break off corals, on which they feed. Also an example of the interesting viviparous fishes of California (*Ditrema*) is exhibited, showing the perfectly formed young ones in the interior of the old fish. The fresh water species of this division are found only in Africa and South America, the most celebrated being the Bolti of the Nile (*Chromis*).

Wall Cases 14-15 contain the COD and FLAT-FISH Tribes.

Wall Cases 16-22 contain the SOFT-RAYED Fishes, that is, those which have no, or only one, strong spine in the fin of the back, or which lack the back fin altogether. The majority live in fresh water, but some tribes are sea-fishes. Cases 16-17: the Cat-fish Tribe, generally armed with strong spikes in the fins on the breast and back, provided with long barbels at the mouth, and without scales, but sometimes with large bony bucklers. Of the numerous various kinds of this tribe, the following are the most remarkable: the European Cat-fish (*Silurus glanis*), the largest fresh-water fish of Europe; the Bayad (*Bagrus bayad*), one of the largest fishes of the Nile; the Electric Cat-fish, which defends itself by electric shocks, and is found in the rivers of Tropical Africa. Case 18: the Salmonoids and Characines, the latter most valuable fresh-water fishes from South America and Africa. Cases 19-21 contain the Pikes and some tribes allied to them, as the Gar-Pike (*Belone*), and Flying-fishes (*Exocoetus*); the Carp and Herring Tribes, exemplified by the common Carp, a

fish indigenous in Asia, and introduced into Europe; the Catla, the most esteemed fish in Bengal; the numerous group of Barbels, one of which is the large-scaled Mahaseer of India; the Roach, Rudd, Chub, Tench, Bream, etc. One of the largest kinds of Herrings (*Megalops*), attaining to a weight of a hundred pounds, from the West Indies, is exhibited on the top of these cases. Case 22 contains the Eels, Congers and Murænas, the latter being frequently ornamented with bright colours, like snakes.

Wall Cases 23-26. The PIPE-FISHES or Sea-needles and the Sea-horses (*Syngnathus* and *Hippocampus*): marine fishes of a singular shape, with a long tube-like snout, at the end of which is the small mouth, and with the body enclosed in hard, bony shields. The males carry the eggs and young ones in a pouch under the tail, or on the lower side of their body. The Globe-fishes (*Diodon*, *Tetrodon*), which are covered with spines, and defend themselves by inflating their body into a globe; they are often found floating on the surface of the water; the flesh of many is poisonous. The File-fishes (*Balistes*), and the Coffin-fishes (*Ostracion*), the body of which is enclosed in a hard, four- or five-sided case. The Sun-fishes (*Orthogoriscus*), well known to all fishermen on the English and Irish coasts, who find them frequently floating asleep on the surface of the sea; they attain to an enormous size, sometimes weighing 800 pounds or more, and are easily recognized by the singular shape of the body, which has the appearance as if the tail had been cut off; they are not used as food. Finally, the Lampreys (*Petromyzon*), the mouth of which is transformed into a sucker; by its means they attach themselves to stones, and also to other fish, feeding on their flesh. The Sea-Lamprey is the largest kind, generally living in the sea, but frequently ascending rivers for a considerable distance. The River-Lamprey is used as bait for the Cod and other sea-fishes, and forms a valuable source of income to the Thames fishermen.

On the top of the Cases are some specimens of the larger Fish; the *Sudis gigas* of Guiana, the largest fresh-water fish; the Flying Sword-fish; the pike of a Sword-fish forced through the oak timber of a ship, these fish swimming with great force; a skeleton of a deep-sea fish from Madeira (*Alepisaurus*) and large Japanese Crab.

Tables 1-12. Insects, such as the Coleoptera, or Beetles; the Leaf beetle, or Mormolyce of Java; the Scarabæus, held sacred by the Egyptians; the large African Goliath Beetles; the Fire-fly of the West Indies; the Weevils, as the Diamond Beetle of Brazil; the long-horned Beetles, such as the Harlequin Beetle; the Tortoise Beetles; the Lady-birds, so destructive to the plant-lice. Orthopterous Insects, such as the Praying Mantis, with their eggs; the Walking Sticks and Leaf insects, resembling leaves and twigs of trees; the Crickets. Neuropterous Insects, as Dragon-flies; Ant-lions, the larvæ of which form pits to catch insects; the White Ants, so destructive in the tropics. Hymenopterous Insects, as the Ichneumons, Ants, Wasps, and Bees: the most interesting of all the orders on account of the curious habits and strange instincts and powers of its members. The Lepidopterous



Insects, such as the Butterflies, Hawkmoths, and Moths. The Hemiptera and Homoptera, with their strange forms. The Diptera, such as the Gnat and the Breeze. The Tsètse of Tropical Africa, a fly which destroys horses and domestic cattle.

Tables 11, 12. The Spiders, as the Mygale, or Bird-catching Spider; the Trap-door-Spiders, which dig holes in clayey banks, and close them by a door hanging with a hinge; the Scorpions; the Ticks, one of which is parasitic on the Rhinoceros. The Centipedes and Millipedes, so called from the great number of their feet.

Tables 13-24. Crustacea, such as the Land Crabs of the West Indies; the Hermit Crabs, which live in shells; the Robber Crab or Tree Lobster, which climbs the cocoa-nut trees to get at the nuts; the Lobsters and Cray-fish; the Glass Crabs found in the tropical parts of the ocean; the King Crabs of America and the Chinese seas.

#### FIFTH ROOM.

The WALL CASES contain the Ganoid and Cartilaginous Fishes, viz.: the Sturgeons of Europe and America, the *Polypterus* of Tropical Africa, and the Bony Pikes (*Lepidosteus*) of the North American Freshwaters, covered with scales, hard and polished as ivory; the African Mudfish (*Lepidosiren*), with four long threadlike limbs; in summer, before the water is dried up, it buries itself in the mud and forms a case in which it lies torpid until the rainy season begins; the Barramunda (*Ceratodus*), a fish hitherto known from fossil teeth only, but recently discovered living in Queensland; the Cartilaginous Fish, such as the Sharks and Rays; the Torpedo or Numb-fish, which defend themselves by means of an electric apparatus on each side of the head; the Sturgeons of the Russian and American rivers; the long and flat-snouted Polyodon of the Mississippi. The middle of the room is occupied by a Saw Fish (*Pristis pectinatus*), common in all tropical seas, and a most dangerous enemy to other large fish, the smaller kinds of whales, and even to man. The Saw Fish is a Shark with the upper part of the snout prolonged into a strong and broad blade, which is armed laterally with large teeth, and generally called the "saw." The mouth itself is armed with very small teeth, which by themselves would be quite harmless. In attacking another animal, the Saw Fish tries to rip open the abdomen with its saw, and having succeeded in thus killing its prey, it feeds on the intestines and other soft organs, leaving the muscular and tougher portions to the stronger-toothed sharks. On the top of the Cases are the saws of various Saw-fish, and specimens of the larger Cartilaginous fish, also some of the larger Sponges, such as Neptune's Cup.

In the Table Cases are exhibited various kinds of Sponges which belong to an extensive class of mostly microscopic beings.

ALBERT GÜNTHER.

## LIST OF PORTRAITS

SUSPENDED ON THE WALLS OF THIS GALLERY.

*First Compartment. Beginning on the left from the Mammalia Saloon.*

1. KING GEORGE II., whole length, by John Shackleton. *Painted for the Trustees.*
2. KING JAMES I. On panel. *Presented by Dr. A. Gifford.*
3. KING HENRY VIII. On panel. *Presented by Dr. A. Gifford, in 1758.*
4. OLIVER CROMWELL. "A copy from Mr. Cromwell's original, grandson to Hen. Cromwell, L<sup>d</sup>. L<sup>t</sup>. of Ireland. 1725." *This Portrait came with the Cottonian Library.*
5. ELIZABETH PRINCESS PALATINE, granddaughter of James I., by Michael Mierevelt. } *Presented by Dr. A. Gifford.*
6. KING EDWARD III. On panel.
7. RT. HON. ARTHUR ONSLOW. Speaker of the House of Commons, wh. 1. *Presented by Admiral Onslow.*
8. ELIZABETH QUEEN OF BOHEMIA, daughter of James I., by Michael Mierevelt. } *Presented by Dr. A. Gifford.*
9. KING HENRY VI. On panel.
10. OLIVER CROMWELL, by Walker. *Bequeathed, 1784, by Sir Robert Rich, Bart., to whose great-grandfather, Nathaniel Rich, Esq., then serving as a Colonel of Horse in the Parliament Army, it was presented by Cromwell himself.*
11. KING JAMES I. *Presented by Mr. Cook.*
12. MARY QUEEN OF SCOTS, "æt. 42." On panel. *Presented by Lieut.-Gen. Thornton.*
13. KING WILLIAM III. *Presented by Dr. A. Gifford.*
14. WILLIAM DUKE OF CUMBERLAND, by Morier. *Presented by Lieut. Gen. Thornton.*
15. JAMES DUKE OF MONMOUTH. *Presented by Dr. A. Gifford.*
16. KING RICHARD II. *Presented, in 1766, by John Goodman, Esq., of the Middle Temple.*
17. QUEEN ELIZABETH, by Federigo Zuccherro. *Presented by the Earl of Macclesfield, 1760.*
18. MARY QUEEN OF SCOTS.
19. QUEEN ELIZABETH. "Anno Dñi 1567." On panel. *Presented by Lord Cardross, 1765.*
20. MARGARET COUNTESS OF RICHMOND. *Presented by Dr. A. Gifford.*

21. KING CHARLES II., by Sir P. Lely. *Presented by Dr. A. Gifford.*
22. KING HENRY V. On panel. *Presented by Dr. A. Gifford*
23. KING EDWARD VI. *Presented, in 1768, by Mrs. Mary Macmorran.*
24. CAROLINE, QUEEN OF GEORGE II., by Jarvis. *Presented by Lieut.-Gen. Thornton.*
25. KING GEORGE I. *From the old Cottonian Library.*

*Second Compartment.*

26. DR. ANDREW GIFFORD, by Russel, 1774. *Bequeathed by himself, 1784.*
27. REV. DR. THOS. BIRCH, painted in 1735. *Bequeathed by himself.*
28. JAMES, 1ST DUKE OF CHANDOS, whole length. *Presented by James Farquharson, Esq.*
29. HUMPHREY WANLEY, Librarian to the Earl of Oxford. *Presented by Herbert Westfaling, Esq.*
30. SIR ISAAC NEWTON, by Van der Banck. *Bequeathed by John Hassell, Esq., Clerk of the House of Commons. 1821.*
31. SIR HANS SLOANE, as "President of the Royal Society." Half length. "Step". Slaughter pinx. 1736."
32. SIR HANS SLOANE, whole length, seated.
33. DR. JOHN WARD, of Gresham College. *Presented by T. Hollis, Esq.*
34. CLAUDIUS JAMES RICH, Esq., born 1787, died at Shiraz, 1821. Resident of the English East India Company at Bagdad from 1808 to 1821, whose Collection of MSS., Medals, and Antiquities is placed in the British Museum. *Presented by his Widow.*
35. ABRAHAM REES, D.D., F.R.S., by J. Lonsdale. *Presented by Joseph Parkes, Esq.*
36. MAJOR-GENERAL HARDWICKE, by W. Hawkins. *Presented by Dr. J. E. Gray.*
37. SIR HANS SLOANE, by Murray.
38. DR. FRANCIS TURNER, BISHOP OF ELY.
39. ROBERT EARL OF OXFORD, by Sir G. Kneller. *Presented, in 1768, by the Duchess Dowager of Portland.*
40. SIR ROBERT COTTON. *Presented, in 1792, by Paul Methuen, Esq., of Corsham.*
41. SIR JOHN COTTON. *From the Old Cottonian Library.*
42. SIR THOMAS COTTON. *Presented by his descendant, Mrs. H. M. Bowdler, 1826.*
43. SIR ROBERT COTTON, A.D. 1629. *From the Cottonian Library.*
44. EDWARD EARL OF OXFORD, by Dahl. *Presented, in 1768, by his daughter, the Duchess Dowager of Portland.*
45. HUMPHREY WANLEY. *Presented by the Earl of Leicester, in 1795, afterwards Marquess of Townshend and Earl of Leicester. "Humfredus Wanley Coventriensis, 1717."*
46. REV. DR. THOMAS BIRCH.



*Third, or Central Compartment.*

47. PETER I., EMPEROR OF RUSSIA, "from an original, drawn by Klingstad, in the possession of the Earl of Hertford, 1725; then Ambassador at Petersburg." *From the Old Cottonian Library.*
48. PEDIGREE OF THE CORNARO FAMILY.
49. STANISLAUS AUGUSTUS I., KING OF POLAND. } *Presented by the*  
 50. CHARLES XII. OF SWEDEN. } *Rev. A. Planta.*
51. A HUNTING PIECE, by Jan Baptista Weenix.
52. LOUIS XIV. *Presented by the Rev. A. Planta.*

*Fourth Compartment.*

53. LORD CHANCELLOR BACON. *Presented by Dr. A. Gifford.*
54. AN UNKNOWN HEAD, in ruff and beard; on panel; "Ætatis suæ 59, 1608."
55. JOHN DUKE OF MARLBOROUGH.
56. WILLIAM COURTEN, Esq., when young, inscribed "Gul. Courten Arm."
57. ANDREW MARVEL. *Presented by Robert Nettleton, Esq., Governor of the Russia Company.*
58. ADMIRAL LORD ANSON. A copy from the Picture at Wimpole *Presented, in 1814, by the Earl of Hardwicke.*
59. ARCHBISHOP USHER. *Presented by Dr. A. Gifford.*
60. DR. THOMAS BURNET. "Ad vivum pinxit Romæ Ferdinand, 1675." *Bequeathed by Matthew Waters, Esq., 1788.*
61. HENRY STEBBING, D.D. "Jos. Highmore, pinx. 1757." *Presented by his grandson Henry Stebbing, Esq., 1813.*
62. SIR HENRY SPELMAN. *Presented by Dr. A. Gifford.*
63. AN UNKNOWN HEAD, a scull in the right hand; on panel. "Ætatis suæ 24. A°. 1569."
64. SIR WILLIAM DUGDALE.
65. WILLIAM CECIL, LORD BURGHEY. On panel. *Presented by Dr. A. Gifford.*
66. MATTHEW PRIOR, by Hudson, from an original of Richardson. *Presented by the Earl of Besborough, 1775.*
67. PORTRAIT OF J. RAY, M.A., the Naturalist, by Mrs. Beale. *Bequeathed by Sir William Watson.*
68. WILLIAM CAMDEN. On panel. "Ætatis LVIII. MDCIX."
69. JOHN RAY, M.A., the Naturalist. *This Portrait belonged to Sir Hans Sloane.*
70. JOHN SPEED, the historian. On panel.
71. ARCHBISHOP CRANMER, "Anno etatis 57, Julij 20," by Gerlach Flicke.\* "Gerlacus fliccius Germanus faciebat." On panel. *Presented, in 1776, by John Michell, Esq., M.P., of Bayfield Hall, Norfolk.*

\* Gerlach or Gerbertus Fliccius. See Walpole Anecd. of Paint., by Dallaway, 8vo., Vol. I., 105, note.

72. WILLIAM SHAKSPEARE. *Presented by M. Maty, M.D.*  
 73. GEORGE BUCHANAN. Inscribed "Ætatis 76, Año. 1581." A small portrait on panel.

*Fifth Compartment.*

74. VOLTAIRE. *Presented by M. Maty, M.D., 1760.*  
 75. VESALIUS, on panel, by Sir Antonio More. *This Portrait belonged to Sir Hans Sloane.*  
 76. AN UNKNOWN PORTRAIT. *Presented by Dr. A. Gifford.*  
 77. A PORTRAIT (called CHARLES I., when Prince). *Presented, in 1759, by Mrs. Elizabeth Gambarini.*  
 78. ANNA MARIA SCHURMAN, by John Lievens.  
 79. SIR FRANCIS DRAKE.  
 80. POPE CLEMENT X.  
 81. SIR ANTONIO MORE. On panel. *Presented by Dr. A. Gifford.*  
 82. COSMO DE' MEDICI and his SECRETARY BARTOL. CONCINI. A copy from Titian. *Brought from the Old Cottonian Library.*  
 83. MARTIN LUTHER, a small whole length on panel. "D. Martinus Luter, 1546, 18 Febr. Ætatis 63. iaer."  
 84. GEORGE, TENTH AND LAST EARL MARISCHAL OF SCOTLAND. On copper; painted at Rome, 1752, by Placido Costanzi. *Presented by Lord Glenbervie.*  
 85. JEAN ROUSSEAU, employed in the Paintings of Montague House. *Presented by Mrs. Woolfryes, 1757.*  
 86. CAPT. WILLIAM DAMPIER, by Murray. *From the Collection of Sir Hans Sloane.*  
 87. CARDINAL SFORZA PALLAVICINI, 1663. *Presented by Smart Lethieullier, Esq.*  
 88. ULYSSES ALDROVANDI, by Giorgione. *From the Collection of Sir Hans Sloane.*  
 89. AN UNKNOWN PORTRAIT of a Gentleman in a ruff and long beard: inscribed "Ætatis suæ 66, An. Dom. 1590." On panel.  
 90. ISABELLA, Infanta of Spain.  
 91. ST. EVREMOND. *Presented by M. Maty, M.D.*  
 92. SIR PETER PAUL RUBENS.  
 93. PRINCESS MARY, afterwards Queen. "Maria Princeps. Año. Dom. 1531." "I. B." initials of the Painter. *Presented by Sir Thomas Mantel.*  
 94. FRANK OF BORSALIA, Earl of Ostervant, who died in 1470.  
 95. LANDSCAPE by Wilson.  
 96. ALEXANDER POPE. *Presented by Francis Annesley, Esq.*  
 97. ALGERNON SIDNEY.  
 98. JOHN GUTTENBERG, Printer. *Presented by Paul Vaillant, Esq.*  
 99. HENRY FREDERICK, PRINCE OF ORANGE. *Presented, in 1782, by Lord Fred. Campbell.*  
 100. JOHN LOCKE. *Presented by Matthew Maty, M.D.*  
 101. GOVERNOR HERBERT, by Devis. *Presented by Admiral Page.*  
 102. JAMES PARSONS, M.D. "Ætat. 60 anno quo Benj. Wilson pinxit, 1762." *Bequeathed by Dr. Knight, 1772.*

103. JOHN WALLIS, D.D., the Mathematician.
104. MARY DAVIS, an inhabitant of Great Saughall in Cheshire, taken 1668, "ætatis 74." At the age of 28 an excrescence grew upon her head, like a wen, which continued 30 years, and then grew into two horns, one of which the profile represents.
105. SIR JOHN DODERIDGE. *Presented by Dr. A. Gifford.*
106. UNKNOWN PORTRAIT, *t. Cha. II.*
107. PHILIP DORMER, EARL OF CHESTERFIELD, by Ramsay, 1765.  
*Presented by Sir Thomas Robinson, Bart. in 1777.*
108. RICHARD BAXTER. *Presented by Dr. A. Gifford, 1760.*
109. SIR HENRY VANE, JUN. *Presented by Thomas Hollis, Esq.*
110. LODOWICK MUGGLETON, "Aged 66, 1674."
111. THOMAS BRITTON, the Musical small-coal-man, "Ætat. 61, 1703."  
By Woolaston.
112. MR. GEORGE VERTUE, the Engraver, "Æt. L. 1733." *Presented by his widow, 1775.*
113. ROBERT CECIL, 1ST EARL OF SALISBURY. On panel. *Presented by Dr. A. Gifford.*

#### GEORGE WILLIAM REID.

\* \* \* The following Portraits, formerly Nos. 61, 84, 85, 87, 107, and 108, viz. Geoffrey Chaucer, 1400, a small whole length on panel; a Limning of Frederick III. of Saxony, by Lucas Cranach; the Portraits of Molière, Corneille, and an unknown head by Dobson, all on panel: with the Portrait of a Pope or Cardinal; on account of their diminutive size, have been transferred to the Print Room; and the Portraits, formerly Nos. 30, 34, and 105, viz. of Dr. Gowin Knight, Dr. Matthew Maty, and Mr. Joseph Planta, Principal Librarians of the British Museum, have been transferred to the Trustees' Board Room. There are also in the Board Room a portrait of Sir Henry Ellis, Principal Librarian of the British Museum, by Mrs. Carpenter, presented by Dr. J. E. Gray, F.R.S.; a portrait of Sir Anthony Panizzi, Principal Librarian of the British Museum, by G. F. Watts, R.A., presented by the Museum establishment on the occasion of Sir Anthony's retirement; and a painting, by A. Archer, showing the temporary arrangement of the Parthenon sculptures at the British Museum in 1819, with portraits of the President of the Royal Academy, officers of the British Museum, &c., presented by Dr. J. E. Gray, F.R.S.



## NORTH GALLERY.

SITUATED in the upper story of the Building, the North Gallery is entered either from the lobby at the north end of the Gallery of Antiquities, or from the lobby at the corresponding end of the Bird Gallery. The rooms into which the North Gallery is divided are numbered I. to VI., and the numbers will be found over the doorways. The floor of the Gallery is occupied by Table Cases, which, in the Rooms I. to IV., contain the collection of Minerals; and, in Rooms V. and VI., are devoted to the fossil remains of Invertebrate Animals. The Wall Cases throughout the Gallery are occupied by the—

## DEPARTMENT OF GEOLOGY.

The Fossil remains are arranged partly in Zoological order and partly in Geological sequence; thus, the species of the natural families, such, for example, as the *Ammonitidæ* (shells allied to the Pearly Nautilus), and *Terebratulidæ* (Lamp-shells), are grouped together; but each family commences with the most recent examples of the group and terminates with those of the older rocks. The series of remains of *Vertebrata*, or animals with a back-bone, commences with the Fishes in Room II., is continued, on the walls facing the windows, to the last Room (No. VI.), and there returns in the Wall Cases near the windows, to terminate in Room II.

Some of the smaller objects belonging to this series will be found in the Table Cases under the windows. In the Lobby, between the Bird Gallery and the Gallery of Minerals and Fossils, is a restored model of the shell of an extinct Fossil Tortoise, of gigantic size, from the Siwalik Hills, in India. Portions of the shell and of other parts of the skeleton of several different individuals of this species of Tortoise (*Colossochelys atlas*), are deposited in Case 2 of Room III., and it is of casts from some of these portions that the restored model is, in a great measure, composed.

## ROOM I.

FOSSIL PLANTS.—Divisions A. & B. of Case 1 contain Vegetable impressions called *Algæ*, from their resemblance to Sea-weeds. They are found in rocks of all ages, and are almost the only Fossils met with in the very oldest strata. Division C. of the same case contains the Fossil Ferns, of the genus *Sphenopteris*, obtained from the Shale beds overlaying the coals.

Case 2. Divisions A. to F. contain Ferns of the Coal-measures belonging to the genera *Neuropteris*, *Cyclopteris*, *Pecopteris*, and *Alethopteris*; together with certain species which are peculiar to the Coal-shales of India and Australia (*Glossopteris*).

In Case 3, are the Ferns peculiar to the Permian, Trias, and Lias formations,—these are in division A.; where will also be found sections of silicified stems of Tree-ferns from Bohemia. In divisions B. and C. are arranged the Ferns of the Oolitic Shales of Scarborough, in Yorkshire; and, in division D. are those of the Green-sand and Wealden formations. Divisions E. and F. contain the Coal-plants called *Calamites*: they have jointed stems, and leaves in whorls, resembling those of the recent “Mare’s-tail” (*Equisetum*). The *Asterophyllites* are also placed here, being now regarded as the fruit and foliage of the *Calamites*.

Case 4 contains the stems of Coal-plants, called *Lepidodendron*, from their scaly bark, allied to the recent Club-mosses (*Lycopodiaceæ*); but they attained the size of forest-trees. Examples of the foliage and fruit of these plants, contained in nodules of clay-ironstone, are placed in the next Case (5, A. B.).

Case 5. In this case are arranged portions of the trunks of Fossil-trees, with regular furrows and impressions, called *Sigillariæ*, also belonging to the *Lycopodiaceæ*. They are found in great numbers in most coal-fields, frequently retaining the erect position in which they grew.

The Fossils named *Stigmaria*, in this Case, and on the top of Case 4, are the roots of the *Sigillaria*. They occur in the fire-clay, beneath seams of coal. The example over the Gallery door originally measured 26 feet in length.

Over Case 5 are placed examples of the opalized trunks of a species of *Banksia* from Tasmania.

Case 6 contains, 1. Fossil Plants of the Kentish-Rag and Wealden strata, including a plant related to the Dragon-tree of Teneriffe, *Dracæna Benstedii*, from the Iguanodon Quarry at Maidstone. 2. Silicified stems of Palms from the West Indies. 3. Palm-leaves and palm-like Fruits (*Nipadites*), from Sheppey, the wood of which was bored by a species of ship-worm (*Teredina*) now extinct. 4. Leaves of Cycadean plants from Scarborough, &c. 5. Fossil Fir-cones and Pine-wood, the former from the cliffs on the coast of Norfolk, belonging to the Spruce Fir, a species which had become extinct in Britain, and has been reintroduced in modern times.

Over Case 6 are placed the silicified stems of *Mantellia*, plants

related to the recent *Cycas*, and called "petrified crows' nests" by the Portland quarrymen.

The Table Case under the window contains leaves of Dicotyledonous Plants, from the Miocene "Brown-Coal" of Germany; the Tertiary Limestone of Æningen., Greenland, &c.

The slabs of Sandstone on the North Wall of this Room, on the left, with the tracks of an unknown animal, called *Cheirotherium*, probably amphibious, with large hind feet, like some Batrachians, are from the quarries of Hildburghausen, in Saxony. On the right hand are placed slabs also supposed to be of the New Red Sandstone formation, with equally remarkable impressions of various dimensions, called *Ornithichnites*, being regarded as the foot-marks of birds. They occur in the Sandstone beds near Greenfield, Massachusetts, at Turner's Falls, in the Connecticut River. Other slabs from the same locality, and also from Cheshire and Staffordshire, covered with reptilian footprints, are placed on Wall Cases 1 and 11 of Room III., and in the third window recess of Room II. On the North Wall of Room I. are Plant remains from Solenhofen, in Bavaria.

## ROOM II.

The classification of the *Fossil Fishes*, arranged in this room, is chiefly in accordance with that proposed by M. Agassiz, in his great work, entitled "*Recherches sur les Poissons Fossiles*," with some modifications founded upon the later systems proposed by Professors Müller and Owen. The series commences with the *Placoid* Fishes, or those of the Shark and Ray tribes, in which the skin is protected by rounded (often star-shaped) and very hard scales, having frequently a raised point, and sometimes a thorn-like prickle in the centre, as may be seen in the scales of the Thornback and some other fishes of the Skate tribe. The upper division of the tail is prolonged beyond the lower lobe; and is supported by a continuation of the vertebral column—a form of tail which is termed *Heterocercal*, and which is most commonly found in all the orders of fishes of the middle and older Geological formations; but which (if we except the Sharks and Rays) is rarely met with in the existing species of fishes, in which the "homocercal" tail, or that with the two lobes equal, prevails.

The skeleton of the *Placoids* being more or less gristly or cartilaginous, and in the same degree perishable and incapable of fossilization, the remains of those fishes consist chiefly of the defensive spines, scales, and teeth; these objects, being mostly of small size, will be found in the Cases under the windows, and in Case 7 at the end of the room.

The Fishes called *Ganoids* have derived their name, and the character of their order, from the lustre of their very hard, enamelled scales; and it is by these parts that they are chiefly represented in the fossil state. The most common form of scale in this order is the rhomboidal, in a few it is round; but the pattern of the external markings varies in almost every species.

GANOID FISHES range from the newest Silurian strata upwards; are most abundant in the lower Oolitic formations, diminish in the cre-



taceous beds, and are reduced to very few genera existing at the present time.

The order is commenced in Wall Case No. 1, by the *Cephalaspides*, a family peculiar to the Devonian period. The species of which it is composed were fishes in which the body was protected by large bony plates, was convex above, and flat beneath; the pectoral fins were represented by large bony appendages, situated close behind the head; and the tail was tolerably long, tapering, and furnished with small scales. The second family of the order, the *Cœlacanthi*, so called from the spines of their fins being hollow, occupy the compartments 3 to 5 of the same Wall Case. In the 6th compartment, and lower division of the 7th, are arranged the *Dipterines*, including fishes of the Old Red Sandstone and Coal formations, having the body protected by rhomboidal scales, and provided with two back fins, as well as two anal fins. The specimens exhibited are chiefly from Scotland. In the 8th compartment are arranged the Acanthodians. The fishes of this family are characterized by the minuteness of their scales and having each fin armed with a strong bony spine. They are mostly from the Devonian of Scotland.

The family of the *Sauroids* (see compartments 8 to 13), contains fishes which exhibit both the uneven-lobed and the even-lobed structure of tail, and is divided accordingly into two minor groups: the Sauroids have conical teeth mixed with minute prickly teeth. The scales vary considerably in form. This family presents living examples in the Bony Pikes (*Lepidosteus*) of the rivers and lakes of North America, and in the Bichirs (*Polypterus*) of the Nile. The Sauroid family is represented by numerous extinct species ranging through nearly all geological strata down to the Devonian.

The Ganoid family called "*Lepidoids*" (see compartments 14 to 20) have the same rhomboidal scales as the Bony Pikes, but in general form they are shorter and have a greater vertical diameter; the teeth are of one kind only, and of a more or less conical form.

The last family of the fishes with ganoid scales is the *Pycnodonts*, of which all the principal genera will be found in compartments 21 and 22. Like the members of the preceding group, these fishes have a short, high, and compressed form. Their teeth are usually large, rounded, and with low crowns admirably fitted for crushing shell-fish. Many of the species are from the Jurassic (or Oolitic) rocks; some are from the Chalk, and a few extend into the Tertiary formations, but there are no known living species.

In the preceding two great divisions of Fishes many of the families of which they are composed are extinct, and a very large proportion of the species is confined to the geological strata beneath the Chalk, whilst those which now come under consideration belong entirely to the Chalk and Tertiary formations, and the families have living representatives. They form two important sections—the *Ctenoids* and the *Cycloids*. The Ctenoids, which are distinguished by their scales being serrated, or finely notched at the free edge, are arranged in compartments 23 to 26: the common Perch is a good example of this

group. The *Cycloids* occupy the compartments 27 to 36. Their scales have the edges smooth. The Fishes of the Mackerel tribe (*Scomberidæ*), of the Carp tribe (*Cyprinidæ*), of the Pikes (*Esocidæ*), and the Herrings (*Clupeidæ*), may be noticed as forming the more important families of this division.

### ROOM III.

Excepting Case 11 and part of Case 7, the whole of the Wall Cases in this room are devoted to Reptilian remains; and amongst them may be first noticed the *Dinosauria*, which group contains the largest terrestrial species, such as the *Iguanodon* and *Megalosaurus*. In the Middle Case (No. 9), on the north side of the room, are arranged the remains of the gigantic *Iguanodon*: firstly, and in the centre, the large slab of Kentish rag from Mr. Bensted's quarry near Maidstone, containing a great portion of the skeleton of a young individual; to the right of this will be found portions of the skull and lower jaw, and the teeth of different specimens of the same species; and to the left, extending to Case 8, are nearly all the more characteristic parts of the skeletons of various *Iguanodons*, chiefly from the Wealden formation at Tilgate, and in the Isle of Wight. These specimens are mostly from the collection of the late Dr. Mantell. On the lower shelves to the right of the centre case containing the *Iguanodon* will also be found the almost entire remains of another land reptile called *Scelidosaurus*, from the Lias of Charmouth, Dorset. The remainder of the Case to the left (No. 8) is occupied by the remains of other gigantic reptiles from the Wealden and upper Oolitic formations, including the *Megalosaurus* and *Cetiosaurus*. In the centre of Wall Case 8 is displayed a considerable portion of the skeleton of a remarkably large land reptile (*Omosaurus armatus*, Owen) recently discovered in the Kimmeridge Clay at Swindon, in Wiltshire. On the right of the centre Case No. 10, in the two first compartments, will be found the remains of the *Hylaosaurus*, including the large block from Tilgate Forest, discovered by Dr. Mantell, which contains a considerable series of vertebræ, dermal spines, and other parts of this singular reptile. The dermal spines and other remains of the *Polacanthus*, a new Wealden reptile from the Isle of Wight, are arranged in Case 9; and on the top of the same Case is a new species of *Plesiosaurus* (*P. laticeps*, Owen), which has recently been added to the collection.

The remainder of this Case is occupied by the fossil Crocodiles.

Among the specimens may be noticed the slender-snouted Crocodilians, in which the vertebræ are bi-concave, including the *Teleosaurus Chapmanni*, from the Lias of Whitby, and other *Teleosauri* from the Lias and Oolites of Germany and France. Among the Crocodilians with the ordinary form of vertebræ, the body, or central part, being concave in front and convex behind, attention may be directed to the skull of the *Crocodylus Toliapicus*, mentioned by Cuvier as the "Crocodile de Sheppey," and a smaller Crocodile skull, which, like the last, is from the London Clay of Sheppey, and received the name of

*Crocodylus Spenceri* from Dr. Buckland. The most gigantic Crocodilian remains hitherto found are those from the Siwalik Hills, they include examples both of the true Crocodiles and of the long and slender-snouted Gavials.

The Reptilian series is here interrupted by a collection of Bird remains, which occupy the Wall Case No. 11 at the end of the room. With the exception of the eggs, and portions of leg-bones of an extinct wingless bird from Madagascar (the *Æpyornis maximus*), the contents of this Case are all from New Zealand, and were found in a deposit which there are good grounds for regarding as of very recent origin. Part of the series was collected by Mr. Percy Earl, in the Middle Island, and the remainder by Mr. Walter Mantell and others, in the North Island. These Bird remains are referred by Professor Owen to several species, and, indeed, to distinct genera of birds, some of which are still living in New Zealand, whilst others are, most probably, extinct. Amongst the living species may be noticed the *Notornis Mantelli*, a very large species of the Rail family. The first indication of this bird was given by some fragments of the skull found with remains of other birds, in superficial deposits of New Zealand, by Mr. W. Mantell. The living bird was subsequently discovered by Mr. Mantell in the middle island of New Zealand, and the specimen which he obtained is deposited in the Museum.\* The greater portion of the bones, as determined by Professor Owen, belongs to a genus of birds to which the Professor has applied the name *Dinornis*: the birds of this genus were wingless, of large size, and some of gigantic proportions. The *Dinornis giganteus* (of which there are numerous parts of the skeleton in the collection) must have been from ten to eleven feet in height. In the *D. elephantopus* the bones of the legs are as thick as those of the *D. giganteus*; but they are much shorter. In this Case are also placed two legs of an equally large kind (*Dinornis robustus*) allied to the last-mentioned bird; bones of a leg of a still larger species (*Dinornis maximus*); and, in a square glass-case near, is an entire skeleton of the *D. elephantopus*. Wall Case No. 11 also contains the remarkable long-tailed Bird from Solenhofen (the *Archæopteryx macrura* of Prof. Owen). The bones of the wings, the blade-bone and furculum, or "merry-thought," the bones of the legs and feet, are those of the bird-class; but the tail is long and many-jointed, with a pair of feathers to each joint; these and the quill feathers and "under-coverts" of the wings are beautifully exemplified by impressions left in the peculiarly fine-grained "lithographic" limestone in which this unique specimen of a bird of the Oolitic, or Mesozoic period, has been fossilized.

To return to the Reptilian remains. The series is continued in, and over, Wall Case 1, where, in a large slab of Purbeck stone, from Swanage, is imbedded a considerable portion of the skeleton of the "Swanage Crocodile," *Goniopholis crassidens*.

Here also are deposited the Pterodactyles, or Flying Lizards from the Lias and Oolites of England and Bavaria. Other specimens of

\* It will be found in the Bird Gallery.—See Case No. 133.



this group, from the Cretaceous Deposits, are arranged in Table-case No. 16, Room IV.

In the corner Case are portions of the skull, lower jaw, &c., of a gigantic Reptile, allied to the Lizards; it is from the Upper Chalk formation at Maestricht; also specimens from the Chalk of England and the Eocene Tertiary of Alabama, United States. The most instructive illustration of this Reptile is the cast of a nearly entire skull, presented by Baron Cuvier, who published a detailed account of the animal in his great work on Fossil Remains, adopting for it the name *Mosasaurus* (Crocodile of the Meuse), proposed by Conybeare.

In Case 2 will be found the remains of a gigantic land-lizard (*Megalia*) from recent deposits in Australia, now believed to be extinct. Considerable space is here devoted to the exhibition of a series of Reptilian remains from the Triassic rocks of South Africa. They include several species of the remarkable genus *Dicynodon* (Owen), discovered by Mr. A. G. Bain. These Reptiles, although allied to the Lizards, have the head short, and provided with but two teeth, and these of large size, and descending, almost vertically, from the upper jaw. Further examples of the South African Reptiles will be found in Wall Case 7, of the same room. Here are also placed various Batrachian remains from the Coal-measures, the Trias, and Tertiary formations, among which may be specially mentioned the head of *Bolodon Kapffii* from Stuttgart, and the gigantic Salamander from Oeningen (better known as the "*Homo Diluvii testis*," of Scheuchzer).

In Case 3 are the fossil Tortoises and Turtles. Amongst the most conspicuous of the Tortoises, are the various bones and portions of the shell of an enormous species from India, of which a restored model will be found in the lobby to Room I. Of the Turtle remains, the *Chelone Hoffmanni*, is also remarkable for its large size, the carapace being, in some specimens, as much as five feet in length. This Turtle is from the Upper Chalk of Maestricht, in the Netherlands. In Cases 4, 5, and 6, commences the series of the large Sea-reptiles (ENALIOSAURIA). They present two well-marked modifications of structure—the Plesiosaurs, in which the neck is long and the head small, and which are arranged in this room; and the Ichthyosaurs, in which the head is large, and joined to the body by a very short neck.

On the Wall Cases 4–6, 8, and 9, are arranged fine examples of this group, including *Plesiosaurus dolichodeirus*, and *rostratus*, and a fine head of *Pliosaurus grandis* (the teeth of this latter are placed in Wall Case 5).

The Wall Case No. 7, at the end of the room, contains Mammalian remains of the Ruminant tribe from the Sewalik Hills and other parts of India; and various Reptilian remains, from the Trias of South Africa, are arranged in the corner of this case: they form part of the series displayed in Wall Case 2, in the same room.

#### ROOM IV.

Here the series of Reptilian remains is continued, by the Sea-reptiles already alluded to in the account of the preceding room, the

*Ichthyosauri* occupying the Wall Cases 1-5. In Wall Cases 6 and 7 is continued the suite of Mammalian remains belonging to the order Ruminantia; Case 6 contains the Cervine remains, and Case 7 the Bovine, the heads and antlers being placed on the top of the Cases.

In a series of small Table Cases beneath the windows are placed various remains of Reptiles, Birds, and Marsupial Mammalia. In Table Case 6 is a selected series of Mammalian remains, and other Vertebrata, from the Red Crag of Suffolk. A series of Fossil Sponges from the Chalk, Green-sand, Oolitic, Devonian, and Silurian formations is displayed in the window recesses of this room.

The gigantic bird, in a case between the windows, forms part of the collection of extinct New Zealand birds arranged in Wall Case 11 of Room III.

### ROOM V.

Here the Wall Cases are occupied by Mammalian remains.

In Case VI. are placed the Fossil *Carnivora* (the Cave-Lion, Hyæna, Wolf, &c.). In Cases I. and II. are arranged (1) the remains of the Cave-Bear and other *Ursidæ*; (2) the Cetaceans, *Ziphius*, *Zeuglodon*, &c.; (3) a large series of *Hippopotami*, remains of which are uncommon in England; the specimens in the Wall Case are chiefly from fresh-water formations in Italy, France and India. The existing Hippopotamus is restricted to the Continent of Africa.

Cases III. to V. contain various other Pachyderms from England, France, Germany, Italy, and India. Remains of several species of *Rhinoceros* from each of these countries are exhibited, together with the Horse, *Hippotherium*, Tapir, *Palæotherium*, *Anoplotherium*, Pig, &c. In Table Case No. 13 are arranged remains of several small Mammalia, including the Monkey, Bat, Beaver, &c. Here is also exhibited a very interesting series of remains of small Mammalia from the Purbeck Beds, near Swanage, in Dorsetshire.

In the centre of this Room are skeletons of the male and female gigantic Irish Deer (*Cervus megaceros*), a series of antlers of which is placed on the Wall Cases, where are also exhibited a collection of skulls of Ruminants from India.

In the Table Cases of the rooms Nos. V. and VI. are arranged the Fossil species of the Invertebrate classes (animals without back-bone), called *Mollusca*, *Articulata*, and *Radiata*.

**CORALS** (*Zoophyta*). In Table Cases 16 and 17, Room V., are exhibited a series of Tertiary and Cretaceous Corals, Oolitic corals, polished sections of "Madrepores," from the Devonshire marble; and Silurian Corals from Dudley, Gotland, and North America. The series is continued in Cases in the window recess, including fine examples of the "Chain-coral" brought home by the Arctic expedition under Captain Kellett.

A portion of Case 15 is occupied with the POLYZOA, horny coral-lines, most of which are found in the sea, encrusting shells and stones; and which are now considered to be more nearly related to certain low forms of MOLLUSCA (the *Tunicata*) than to the ZOOPHYTA.

The remainder of the Case is occupied with NUMMULITES (*Foraminifera*); numerous examples are exhibited of these small chambered shells, which resemble *Nautili* and *Ammonites* in form, but are constructed by creatures of a more simple organization. The larger sorts are most abundant in the Older Tertiary rocks ("Nummulitic limestone") of Europe, Africa, and India,—such as that of which the Great Pyramid is built.

Two instructive series of enlarged models of these, for the most part, microscopic forms, are placed in this case: one series by M. D'Orbigny, the other by Drs. Reuss and Fritsch.

STONE LILIES (*Crinoidea*). In Cases 18 and 19, Room V., and the adjoining Window-recess Case, is a series of these once abundant forms of stalked Star-fishes, now so exceedingly rare in a living state. They are represented by forms from the Silurian, Carboniferous, Liassic, Oolitic, and Cretaceous formations. The most noteworthy are the *Crotalocrinus rugosus*, from Dudley; the group of heads of *Pentacrinus briareus*, from Charmouth, Dorset; the series of Lily Encrinites (*Apiocrinus Parkinsoni*), from Bradford; and of *Marsupites Milleri*, from Kent and Sussex.

In the Window Case, between Table Cases 16 and 17, is arranged a series of Fossil Star-fishes from the Silurian, Oolitic, Cretaceous, and Tertiary rocks.

SEA-URCHINS (*Echinidæ*). Case 22, Room VI. These are arranged in four principal groups. 1. Those from the Tertiary strata, of which the most remarkable are the large *Clypeasters* from Malta. 2. The Chalk *Echinidæ*, amongst which are the Helmet-urchins (*Ananchytes*), popularly known as "fairy-loaves;" the Heart-urchins (*Spatangidæ*), called "fairy-hearts;" and numerous species of *Cidaris*, provincially termed "shepherd's crowns;" some of the specimens have spines still attached to the shell. 3. The Jurassic or Oolitic *Echinidæ*, and the Sea-urchins from the Trias and older rocks, which include many singular forms of the spines or locomotive organs.

WORMS (*Annelida*). One half of Case 14, Room V., is occupied with examples of the tubes, or shells, of fossil Annelids (*Serpulæ*). One species, known as the *Vermicularia Bognoriensis*, makes an almost regularly convoluted tube, like a snail-shell; a mass composed of these tubes is placed in this Case.

FOSSIL INSECTS (*Articulata*). The other half of Table Case No. 14, Room V., contains the Insect remains, consisting of the wing-covers (*elytra*) of beetles from the Oolitic strata of Purbeck and Stonesfield, and Dragon-flies (some in their larval state), from Solenhofen and Eningen. There is a wing of a large flying insect, resembling the living *Corydalis* of the United States, in a nodule of clay-ironstone from Coalbrook Dale. Insect remains in amber from Stettin, on the Baltic, are also here displayed.

Fossil insects may be seen in some of the specimens of amber in the Table Case No. 60, Room I.

CRUSTACEA,—CRABS AND LOBSTERS. Cases 7 and 9, Room VI., contain the exhibited portion of this class. The first half of Case 9



contains the *Cirripedia*, represented at the present day by the Ship Barnacle and the Acorn-shell. The second, contains the Bivalved Crustacea, Phyllopods and Ostracods; and a portion of the Trilobites; the remaining portion being in Table Case 7. In the adjoining Window-recess Case is exhibited a series of Crustaceans belonging to the *Eurypteridæ* and *Limulidæ*, or King-Crabs. The gigantic *Eurypteridæ* are extinct, but the King-Crab is found living at the present day. Fine examples of *Limulus*, from Solenhofen, and of *Slimonia*, from Lanarkshire, are placed on Case 9.

Case 7 contains the *Trilobita*, the *Isopoda*, and the *Decapoda* (Crabs and Lobsters). Of the Trilobites, by far the greater part are from the Wenlock Shale and Limestone of Worcestershire and Staffordshire, and the Silurian rocks of Bohemia. The "Dudley Locusts" (*Calymene Blumenbachii*) and the great "Barr Trilobite" (*Illænus Barriensis*) are among the earliest fossils known to science. Fossil Lobsters are found to extend from the Coal Measures to the present day; whilst true Crabs first appear in the Upper Oolite. Specimens from the Lias of Lyme, the Oolite of Solenhofen, and the London Clay of Sheppey, are most deserving of attention.

The FOSSIL SHELLS (*Mollusca*) are divided into four groups. 1. Lampshells (*Brachiopoda*). 2. Ordinary Bivalves (*Conchifera*). 3. Spiral Univalves (*Gasteropoda*). 4. Chambered Univalves (*Cephalopoda*).

LAMP-SHELLS (*Brachiopoda*). Cases 2 and 3, Room VI. Those from the Tertiary strata belong to existing genera, and some to existing species; but others, like the great *Terebratula* of the Suffolk crag, are unknown in a recent state. The Chalk species are no longer living, and belong chiefly to the genera *Terebratula*, *Thecidium*, *Rhynchonella*, and *Terebratella*, of which all, excepting the last, appear to be verging towards extinction, or are scantily represented by existing species.

The FOSSIL BIVALVES (*Conchifera*), and SPIRAL UNIVALVES (*Gasteropoda*), have been arranged in parallel groups, according to their geological age.

#### TERTIARY FOSSIL SHELLS. (Room VI.)

1. NEWER PLIOCENE. The Shells of this Geological period are displayed in the Table Cases numbered 11 and 12, and in part of Case 13.

2. OLDER PLIOCENE. In Table Case 10, will be found Shells of the "Crag" of the Eastern Counties, of which more than half are still existing, either in British Seas, in the Mediterranean, or on the coasts of Norway and North America. And in part of Table Case 11 is exhibited a collection of Lithodomous Mollusca, with their crypts or cells: they are chiefly from the Crag of Suffolk.

3. MIOCENE, or "Middle Tertiary." To this period are referred the Shells from Touraine, Bordeaux, and Poland, in Case 6; from Malaga, Case 4; and from St. Domingo, Case 13. Some of the Shells collected in the Canary Islands, and in Madeira, by Sir Charles Lyell, are referred to the same period: they are also in Table Case 13.

4. EOCENE TERTIARY, or London Clay and Paris Basin (Cases 4, 5 and 8), Room VI. Not any of these can be certainly identified with living Shells; and the species which they most resemble are now found at the Cape of Good Hope, the western coast of South America, and other localities remote from those where the fossils have been found.

#### SHELLS OF THE SECONDARY STRATA. (Rooms V. & VI.)

5. Chalk, Gault, and Green-sand (CRETACEOUS SYSTEM). (Table Cases 1 and 2, Room V.) The characteristic Shells of the Chalk are *Inocerami*, related to the recent Pearl-oyster; *Spondyli*; Scallops (*Pecten*), of peculiar form; "Cockscomb" oysters, and species of *Lima* and *Pleurotomaria*. One peculiarity of the Chalk Fossils is, the constant absence of the interior pearly layers of the shells, which have been removed subsequent to their imbedding. In the Green-sand strata, *Trigonia* abound, and peculiar bivalves, of an extinct family (*Hippuritidæ*), related to the recent *Chama*. Case 1, Room VI.

6. JURASSIC, or OOLITIC SHELLS. (Cases 2 and 3, Room V.) The shells of the Portland stone, Bath stone, and other Oolitic rocks, and of the Lias, include numerous species of *Trigonia*, the internal casts of which are often found, whilst the shells have been dissolved and removed from the rock; they are called "horse-heads" by the quarry-men, and are sometimes silicified, and contain traces of the shell-fish itself. Amongst the Oolitic oysters, are some whose shells have been moulded on *Trigonia* and *Ammonites*.

7. THE SHELLS OF THE TRIASSIC SYSTEM in Case 4, Room V., consist of the original specimens figured and described by Dr. Klipstein, in his work on the fossils of the salt-marls and Alpine limestone of Austria.

#### PALEOZOIC SHELLS.

8. MAGNESIAN LIMESTONE (Permian), of Northumberland and Durham. (Case 4.)

9. CARBONIFEROUS LIMESTONE, and Coal-measures of Britain and Belgium. (Cases 4 and 5.) Chiefly from the collection of Professor De Koninck, of Liege.

10. DEVONIAN SYSTEM. (Case 5.) Devonshire and the Eifel.

11. SILURIAN SYSTEM. (Cases 5 and 6.) Presented by Sir Roderick Murchison, Bart., K.C.B.

#### CHAMBERED SHELLS (*Cephalopoda*).

The Shells of the chambered univalves (*Cephalopoda*), related to the recent Nautilus and Cuttle-fish (*Sepia*), are placed in the Table Cases (7 to 12 and 14) of Room V.

In Case 10 are placed the curious fossils named *Aptychi* and *Trigonellites*, now known to be the operculum or covering to the mouth of the shell of the Ammonite.

In Case 11 the fossil *Nautili* are displayed. Those from the London Clay of Highgate and Sheppey are specially worthy of notice.

## ROOM VI.

Room VI. is occupied chiefly by the osseous remains of the Edentata (quadrupeds without front teeth), and large Pachydermata (thick-skinned herbivorous quadrupeds), such as the Elephants and Mastodons. Of the Edentate order of quadrupeds, the most striking example is presented by the skeleton of the Megatherium. The remains of this animal have been met with in the southern parts of South America and more especially in the region of Buenos Ayres. A slight acquaintance with the bony framework of animals may enable the visitor to appreciate the enormous muscular power which this animal must have possessed; the huge Mastodon near it must have been a comparatively feeble animal. The strength of the Megatherium is indicated by the form of the bones, and especially their tubercles and ridges, to which the muscles were attached. In the fore parts of the body the framework is comparatively slender; the contrary is the case with the hind quarters, where enormous strength and weight are combined, indicating that the animal habitually rested on its haunches and powerful tail, and whilst in that position could freely use its flexible arms, and the large claws with which its fore-feet were provided.

The affinity of this animal to the existing Sloth is evident, from the structure of the skull, blade-bone, &c.; the teeth are the same in number, kind, structure, mode of growth, and mode of implantation, as in the Sloth, whence the similarity of food may be inferred; but the different proportions and colossal bulk of the Megatherium indicate that instead of climbing trees, like the Sloth, it uprooted and tore them down, to feed upon the leaves and succulent branches.

This skeleton is composed, in part, of casts of bones, in the Museum of the Royal College of Surgeons, brought from Buenos Ayres by Sir Woodbine Parish, and, in part, of casts of bones of the same species and size in the British Museum. In the Wall Case No. 4, between the windows, is deposited an extensive series of the bones of different individuals of the Megatherium, all of which are from the region of Buenos Ayres. In Case No. 3 are deposited the bones of allied animals, *Scelidotherium*, *Mylodon*, &c., also from South America. On the stand with the Megatherium is placed a portion of a carapace or shell of a species of *Glyptodon*, an extinct genus nearly allied to the Armadillos, and of which several species have been discovered in South America. In some of these species the carapace must have been from ten to twelve feet in length: in all, as in the smaller species here exhibited, it was devoid of those "bands" or "joints" which give it flexibility in the small existing Armadillos. In the Wall Case, at the end of the room, may be seen the tail, with the bony sheath, of two of the largest kinds of *Glyptodon*. In the centre of the Room has been placed the cast of an entire carapace, with the singularly-armed tail-sheath of this animal; and on the tops of the Wall Cases are considerable portions of the carapaces of species of *Glyptodon*.

The Elephant remains exhibited in the Wall Cases opposite



the windows have been referred by Dr. Falconer to nine species; viz., three European, and six Indian; but of the European species one (the Mammoth) is common to the northern parts of Europe, Asia, and America: a skull of this animal, found at Ilford, in Essex, having tusks of ten feet eight inches in length, has been recently set up in the middle of the Room. The Mastodon genus presents three European species (two of which are found in England), three species from India, one from North America, and one from South America. The Mastodon of which the entire skeleton is mounted in Room VI. is of the North American species (*Mastodon Ohioticus*). All these species of Elephant are extinct; that is to say, none of them resemble either of the two living species, the African and Asiatic Elephants; and of the genus *Mastodon* there is no living representative. The European Mastodons are found in strata which are more ancient than those which contain the Elephant remains: but the Indian species of Mastodon were coeval with the fossil Elephants from the same country. The two genera, *Elephas* and *Mastodon*, have much resemblance in most of the characters exhibited in their skeletons, but they differ considerably in their dentition. In the Elephant the grinding tooth is made up of a number of flattened plates cemented together, each plate being enclosed by enamel; the enamel being considerably harder than the other substances which compose the tooth, wears less readily, and hence projects in the form of transverse ridges on the crown of the tooth, which has been subjected to much attrition. The crown of the tooth in the Mastodons presents, before it is worn, a number of conical prominences, which are more or less united in the transverse direction of the tooth, so as to form high ridges.

Nearly allied to the Mastodons is the extraordinary animal the *Dinotherium*, of which the skull, lower jaws of individuals of different ages, and detached teeth, will be found in Wall Case No. 2, between the windows. Here it will be seen that the large tusks with which the animal was provided, instead of being in the upper jaw, are implanted in the lower jaw, and are directed downwards.

In Wall Case No. 1 are exhibited fossil remains and casts of large extinct quadrupeds of the Marsupial, or pouched order, which have been recently discovered in Tertiary formations in Australia. Of these the most gigantic is the *Diprotodon Australis*, the skull of which measures upwards of three feet in length, and exhibits a dentition corresponding, in the number of teeth and in the shape of the grinders, with that of the Kangaroo, but resembling that of the Wombat in the large size and curvature of the front incisors. A fossil lower jaw, and the cast of the skull of a smaller herbivorous marsupial quadruped (*Nototherium Mitchelli*, Owen), are here shown. The largest aboriginal quadrupeds now known to exist in Australia are the great Kangaroos; and it is to the Kangaroo family that the above-named extinct species present the nearest affinities. In this Case is also placed remains of a large Marsupial Tiger, the *Thylacoleo carnifex*, from Darling Downs, near Sydney. The remains of the smaller species of Marsupials will be found in Table Case 6, of Room IV.

At the end of the room opposite the entrance doorway, is the Fossil Human Skeleton brought from Guadaloupe in the West Indies by Sir Alexander Cochrane, and presented to the Museum by the Lords Commissioners of the Admiralty. Human skeletons are found in the island just mentioned in a solid and very hard limestone rock, which occurs on the sea-shore at the base of the cliffs, and which is more or less covered by the sea at high water. The rock is composed of sand, the detritus of shells and corals of species still inhabiting the adjacent sea; it also contains some species of land shells, identical with those now living on the Island: and, accompanying the skeletons, are found arrow-heads, fragments of pottery, and other articles of human workmanship. Beneath this specimen are placed masses of stalagmite, containing imbedded bones and skulls, the remains of aborigines, from the ossiferous cavern of Bruniquel in the South of France. On the lower shelves of the adjoining case (No. 11) are placed other human remains, together with worked implements of stone and bone, and numerous horns, teeth, and bones of the Reindeer, gigantic Ox, Ibex, Chamois, Wild Horse, Bird's bones, &c., the remains of the animals which served as food for the men of the Flint Period in that part of Europe. These are also from the Bruniquel Cavern.

On the upper shelves of the Cases to the right and left of the Human Skeleton (Cases No. 10 and 11) are arranged numerous mammalian remains from South America.

The lower half of Case No. 11 is devoted to an extensive series of remains of the "Pigmy Elephant," discovered by Dr. Leith Adams, in the caverns and fissures of the Island of Malta. These remains belonged to individuals of different ages, from the young to the adult, and furnish evidence of the former existence in Malta of a race of Elephants which, as compared with the living species, were of exceedingly diminutive size.

GEORGE R. WATERHOUSE.

## NORTH GALLERY.

THE six rooms forming the North Gallery are numbered over the doorways. The first four of these rooms contain sixty large and four small Table Cases in which the Collection of Minerals is displayed, besides two Cases containing the Meteorites. The Wall Cases and a few small Table Cases in these Rooms, and the whole space in Rooms V. and VI. are devoted to Fossils.

## DEPARTMENT OF MINERALOGY.

The sixty large Table Cases containing the Minerals are numbered consecutively. Commencing at the east end of the Gallery in Room I. and passing down the south side of the four rooms, the numbers return up the north side, the sixtieth table standing opposite to the first. Corresponding with this order of the numbers on the Table Cases is that of the Minerals arranged in them.

The following sketch will serve to indicate the general features of the arrangement, and, by giving the numbers of the particular Table Cases, through which the principal divisions, sections, &c., are distributed, it will serve as a guide for finding any particular Minerals. The names of the species, as well as of important varieties, will be found within the Table Cases, associated with the Minerals to which they belong.

At the eastern end of Room I., adjoining the wall, are two glazed Cases. In these, the important Collection of Meteorites is displayed. In Case A. are seen the stony varieties, the "Aërolites." Of these there are a large number characterised by the presence of minute stony spherules. They are the "Chondritic" Aërolites: they all contain meteoric iron in fine particles disseminated through them, and the more chondritic varieties are on the left hand side of the Case. Among other kinds of aërolites the carbonaceous stones that fell at Cold Bokkeveldt, Kaba, Grosnja, and Montauban, on the right hand end of this Case, are remarkable. So is the great chondritic aërolite that fell at Parnallee, in Madras, on February 28, 1857; presented to the Museum by Sir Wm. Denison, the Governor of that Presidency. The stone that fell at Busti on December 2, 1852, is also in this Case. It is remarkable for containing crystalline calcium sulphide, associated with Enstatite and Augite.

In Case B. are displayed, on the left extremity of the Case, the Siderolites, while the rest of the space is occupied by the Aëro-siderites. The former are masses of meteoric iron containing stony matter; the



latter consist of the metallic alloys of iron and nickel with small amounts of other metals, known as "meteoric iron." They also contain mechanical admixtures of compounds of these metals with phosphorus, and also with sulphur. Among the specimens of the former class, is the mass found at Breitenbach in Bohemia, in 1861. It contains Silica crystallised as Asmanite in the orthorhombic system, associated with a ferriferous Enstatite (Bronzite), that is in some cases well crystallised. The crystalline structure of the meteoric iron masses is effectively shown by the etching of their polished surfaces. In this case are seen two small but very interesting iron meteorites, the falls of which were witnessed; the one on Jan. 23, 1870, at Nedagolla, in Vizagapatam, India; the other at Rowton, in Shropshire, on the 20th of April, 1876. On the north side of this room is the vast mass of meteoric iron found at Cranbourne, near Melbourne, in Australia, presented by James Bruce, Esq., and weighing above  $3\frac{1}{2}$  tons. At the east end of the gallery is one weighing 1,400lbs., presented by Sir Woodbine Parish, found on the Gran Chaco, South America; and adjoining it is another mass of iron of nearly 5 cwt., from the Desert of Bolson de Mapimi, Mexico, supposed to have fallen in 1837.

The Collection of Minerals is arranged in four principal Divisions. These are—

DIVISION I. The Native Elements. Cases 1, 2, 3, 4 (i.)

DIVISION II. The Compounds of Metals, with elements of the Arsenic Group (the Arsenoid elements, viz. Bismuth, Antimony, and Arsenic); or with elements of the Sulphur Group (the Thionids, viz. Tellurium, Selenium, and Sulphur); or with elements belonging to both groups. Cases 4 (ii.) to 12 inclusive.

DIVISION III. The Compounds of Metals with elements of the Chlorine Group (the Halogen elements—Iodine, Bromine, Chlorine and Fluorine). Cases 13 and 14.

DIVISION IV. Compounds of elements with Oxygen. Cases 15 to 60.

These Divisions are again subdivided into sections and classes, the latter embracing the minerals which fall under the same general chemical denomination; as, for instance, the salts of the same acid or of a group of acids chemically and crystallographically equivalent to each other. Each class is further separated into distinct chemical series, the minerals included in any series being such as are designated by the same or equivalent typical formulæ. Subordinated to this chemical system of classification is the final distribution of the several homotypical species of each *chemical* series, into distinct *crystallographic* series, arranged according to the crystalline system to which they belong; the order of sequence of these systems being—1st, the Cubic System; 2nd, the Dimetric or Pyramidal System; 3rd, the Trimetric or Ortho-

rhombic System; 4th, the Hexagonal or Rhombohedral System; 5th, the Oblique or Clinorhombic System; 6th, the Anorthic System; and finally, Amorphous substances, that either present no crystalline forms, or the forms of which, if they be crystalline, are not determinable. In the following observations the term "group" will be reserved to connect Minerals, whether individual species, series, or classes, which present such a community of physical and other characters as imparts to them a sort of family resemblance.

### DIVISION I. THE NATIVE ELEMENTS.

In Cases 1, 2, 3, and the first half of 4, are arranged such of the Div. I. elementary forms of matter as are found occurring in nature in the un- Cases 1, 2  
combined state. These native elements, which form but a small pro- 3, 4 (i.)  
portion of those the chemist has eliminated from the Mineral Kingdom, are arranged in sections, of which the first is that of the native metals and their alloys.

Of the series of native metals crystallising in the cubic system the various forms of Copper, Silver, and Gold are the most important; and Case 1, 2  
crystals of these metals are exhibited, remarkable for the perfection of their forms, or conspicuous for their size. The crystallised copper from Siberia and from Lake Superior, the silver in crystals from Kongsberg and from Freiberg, the suite of specimens of gold from Merionethshire and other British localities, two unique nuggets of crystallized gold from Case 2.  
the MacIvor Diggings, in Australia, and one from California, are especially worthy of remark. Besides these, will also be seen native foil of silver and of gold: moss-like filamentary aggregations of copper and of silver; nuggets, and washed grains of gold, and specimens of all these metals, in which a simple crystalline form, by being repeated or prolonged along particular axes has built up dendritic, ramose, capillary, and other singular kinds of structure. Among the specimens of gold and of *electrum*, or argentiferous gold rich in silver, from Transylvania, are some worthy of notice from the sharpness of their crystalline forms. Native lead from Sweden, and a crystalline nugget of platinum containing metallic iron and presenting magnetic polarity, given by H. I. H. the Grand Duke of Leuchtenberg, are exhibited in Case 3. The rhombohedral series of metals includes an isomorphous group — the Arsenoids — namely, Arsenic, Antimony, and Case 3 (i.)  
Bismuth, with which its crystalline form, rather than its chemical analogies, associates the rare native element Tellurium.

Next to the metals are arranged the Metalloids, a section including Case 3 (ii.)  
the carbon group and the sulphur group. In the former, elementary Carbon is illustrated in its two allotropic mineral forms: Diamond and Graphite. Of the Diamond, a large and extremely choice series of crystals is exhibited, together with models of the most famous for their size and history of the specimens of this, the hardest and most resplendent of gems. Specimens of the diamonds of South Africa are exhibited with the rock in which they are found.

Div. 1.  
Case 4.

Of Sulphur, large and splendid yellow crystals are exhibited from Conil, near Cadiz, and fine specimens from Sicily. The glazed front of Case 2 contains specimens belonging to this division, of extraordinary size and beauty.

Div. II. DIVISION II. COMPOUNDS OF THE ARSENOID AND THIONID ELEMENTS.

Cases 4 (ii.)  
to 10 (i.)

Leaving the native elements, we enter upon minerals which are the products of the chemical combination of the elements with each other; but the transition is not an abrupt one. The alloys, or mixtures of metals of one and the same group, were associated in the first division with the metallic elements that compose them. But where metals belonging to distinct chemical groups are combined, they cannot be classed with the free elements. Such are the combinations of Arsenic, Antimony, and Bismuth with metals of other groups, and they (the arsenides, antimonides, &c.) accordingly take their places as the first section of Division II and will be found arranged in the latter half of Case 4.

Next in order to these are placed, as a second section of Division II., the compounds of metals with the "thionid elements;" and accordingly the tellurides, selenides, and sulphides are displayed in Cases 5 to 9 inclusive.

These are succeeded by a third section of this division, namely, by Minerals to form which compounds belonging to each of the former sections are combined together.

These three sections may be severally represented by their prominent members, the arsenides, the sulphides, and the arseno-sulphides.

Section i.  
Case 4 (ii.)

The first of these sections comprises the cuprous arsenides, such as Domeykite, the tricuprous arsenide; also, the antimonide of Silver or Dyscrasite, diargentous antimonide. Besides these there are included in this section several compounds of Iron, Cobalt, and Nickel. Nickeline, called also "Copper-Nickel," from its colour, is a rhombohedral mineral, the nickel arsenide. Chloanthite is the nickel diarsenide and Smaltine, or "tin-white Cobalt," the cobalt diarsenide, of which Safflorite is a variety, containing Iron in place of a part of its Cobalt. These minerals are cubic in crystallisation, but some of the substances which constitute them are also found in orthorhombic forms, affording examples of dimorphism. Thus the nickel diarsenide, when thus occurring in crystals of the orthorhombic system, is the mineral Rammelsbergite (of Dana), and Leucopyrite is a corresponding iron diarsenide.

Section ii.

In this section is also included the cobalt triarsenide, Skutterudite. The second section includes the various compounds of Sulphur. Selenium, or Tellurium—the Thionid elements—with the metals, Silver, a monad element, and Copper, a metal that in one group of its salts plays the part of a monad element, contribute to form a small group in this section of the type  $M_2\Sigma$ . Eucairite is a selenide of Silver and Copper, and Crookesite is a selenide of Copper and Thallium.



Hessite and Petzite are the tellurides of Gold and Silver, Naumannite the corresponding selenide of Silver, while Argentite is the sulphide of Silver. The latter are cubic in crystallisation, but the silver sulphide is a dimorphous mineral presenting itself as Acanthite in forms belonging to the orthorhombic system. To this system belongs also Copper-glance, a valuable ore of Copper, the "cuprous" sulphide. Among the other important minerals in this section, a cubic series of monosulphides occurs which includes two commercially very important ores—Galena, the sulphide of lead, and Blende, the sulphide of zinc.

A Rhombohedral series includes Covellite, the cupric sulphide, Cinnabar, or mercuric sulphide, the unique ore of the important metal Mercury. Millerite is the nickel monosulphide, and Greenockite, a rare mineral in bright yellow crystals, consists of the corresponding cadmium sulphide.

There is also an important series of disulphides wherein Hauerite and Iron-pyrites, which are respectively the persulphide of manganese and of iron, are cubic, while as Marcasite the latter compound is orthorhombic in crystallisation. These two forms of iron persulphide are frequent and familiar minerals, Iron-pyrites being conspicuous for its sharply defined forms, and Marcasite, or "White Iron-pyrites," for the fantastic groupings in its crystallisation that have obtained for it the various names of Spear pyrites, Cockscomb pyrites, &c.

Molybdenite ( $\text{MoS}_2$ ) and Realgar ( $\text{As}_2\text{S}_3$ ) are severally molybdenum and arsenic disulphides; the former a rhombohedral, the latter an oblique mineral.

Here also is included Laurite, the rare ruthenium sulphide.

Among the trisulphides we find some important compounds of the triad elements crystallising in the orthorhombic system. They are Orpiment, or arsenic trisulphide ( $\text{As}_2\text{S}_3$ ), and the two isomorphous trisulphides of Bismuth and Antimony, Bismuthite ( $\text{Bi}_2\text{S}_3$ ) and Antimonite ( $\text{Sb}_2\text{S}_3$ ). Of both the last minerals, and in particular of Antimonite, very fine specimens are in this Table Case.

Antimonite is an important source of the metal Antimony. The third section of the division is composed of minerals wherein certain arsenides, &c., of Section i. are combined with sulphides of Section ii., or which may be looked on as the result of a replacement of half the Arsenic of the minerals in the former section by its equivalent of Sulphur. Of these there is a cubic series, including Cobaltine, or Cobalt-glance, the "Silver White Cobalt" of early mineralogists, a Cobalt Sulphide with part of the Sulphur replaced by Arsenic and part of the Cobalt by Iron  $\left\{ (\text{Co}, \text{Fe}) (\text{S}, \text{As})_2 \right\}$ . In Gersdorffite or

Arsenical Nickel-glance, half the Sulphur is replaced by Arsenic, and in Ullmannite or Antimonial Nickel-glance by Antimony and Arsenic.

In this section, also, the minerals of this chemical type exhibit a dimorphism similar to that of Pyrites and Marcasite among the disulphides of Section ii., and of Rammelsbergite and Chloanthite among the diarsenides of Section i.; for in Mispickel and Glauco-dote we

Div. II.

Case 5 (i.)

Case 7 (i.)

Cases 5 (ii.)  
and 6.

Cases 7 &amp; 8.

Case 8.

Case 9.

Case 9.

Sect. iii.

Case 10.

Case 10.

DIV. II. find arsenio-sulphides of Iron and of Cobalt with Iron of the same chemical type as Cobalt-glance, but crystallised in the orthorhombic system. Thus the three homotypic series of cubic diarsenides, disulphides, and diarseniosulphides belonging to the three sections of this division might be treated as a single group, while the three corresponding trimetric series may be looked on as another such group.

Sect. iv. Besides the three sections already described, this division contains a fourth, wherein metallic sulphides are so combined with sulphides of Arsenic, Tin, Iron, &c., as to produce a series of sulphur salts, in the constitution of which Sulphur plays the part which Oxygen plays in the ordinary oxygen-salts. This section is a numerous one in point of species, and the following are a few minerals included in it that are especially worthy of note.

Cases 10, 11, 12. In one (and that a somewhat ambiguous) class of these Salts, Iron, either as an iron sesquisulphide ( $\text{Fe}_2\text{S}_3$ ) or an iron persulphide ( $\text{FeS}_2$ ), would seem to enter as a constituent of the "acid" ingredient. In this class we meet with two important copper ores, the largely worked Chalco-pyrites or Copper-pyrites, and Erubescite or Purple Copper-ore. Of both these minerals, there are crystallised specimens from Cornwall; and massive pieces from Tuscany are seen in the front of Case 7.

The rare mineral, Sternbergite, consisting of Iron, Sulphur, and Silver, belongs also to this class; while Linnæite, or "Cobalt-pyrites," ( $\text{Co}_2\text{S}_3$ ,  $\text{CoS}$ ), is a sulphur-compound of Cobalt, exactly analogous to the oxygen-compounds termed the "magnetic oxides" of Iron or Manganese.

Case 11. Tin-pyrites is a dibasic cuprous sulphostannate, containing Iron and Zinc.

The largest class of the sulphur salts is that consisting of sulpharsenites, sulpho-bismuthites, and sulph-antimonites. Among these Case 11. Tetrahedrite (Fahlerz or Grey Copper ore) is noticeable as a most important ore of Copper. It is a tetra-basic sulph-antimonite of that metal, in which the copper is frequently replaced by small quantities of silver, and is also associated with sulphides of Iron and Zinc. In some of its varieties, as in Tennantite, the Antimony trisulphide is entirely, and in others partially, replaced by an equivalent of Arsenic trisulphide. The argentiferous Tetrahedrite is a valuable ore of Silver. Remarkable specimens of Bournonite, a tri-basic sulph-antimonite of Copper and Lead from the Herod's-foot mine in Cornwall,

Case 11. are here in juxtaposition with those from the Hartz, and from Traversella. The so-called Red Silvers, a group of isomorphous rhombohedral minerals, are the tri-basic sulphantimonite and sulpharsenite of Silver, Case 12. Pyrargyrite and Proustite; sometimes in a comparatively isolated state, but more frequently blended together in various proportions. Beautiful as well for their forms as for their blood-red colours, that are deeper in tint according as the antimony preponderates over arsenic, they constitute one of the more precious of the ores of Silver. The specimens of Pyrargyrite and Proustite exhibited in Case 12, and in particular those of the latter mineral from Chili, are extremely fine.

Among these a large mass of resplendent crystals, of a rich ruby Div. II. colour by transmitted light, was presented by H. Ludlam, Esq., and Case 12. is a unique specimen.

Among the rarer minerals, attention may be called to the fine specimens of a variety of Freieslebenite, from Hiendelencina, in Spain; also to Fireblende and Xanthocone, the latter containing a tri-basic sulpharsenate and sulpharsenite of Silver; and to the series of minerals from the Binnenthal, including very fine crystals of Jordanite.

### DIVISION III. COMPOUNDS OF THE HALOGEN ELEMENTS.

DIV. III.

Sect. i.

Cases 12,

14.

Case 13.

This next principal division of the Collection is also subdivided into the simpler compounds, and a more complex section of Salts. Among the former will rank Calomel, Salammoniac, Common Salt (Sodium chloride), and Sylvine, the corresponding potassium chloride, the two latter being crystallised in large cubes and cubo-octahedra. With these are arranged the chloride, iodide and bromide of Silver, and the mixtures of these *inter se* which are kept secluded from the light. The crystal forms and colour suite of Fluor spar exhibited in Case 14 form a series as remarkable for beauty as any in the Collection.

The Salts in this division are represented by certain double Sect. ii. fluorides, of which the most important is the Greenland mineral Case 14. Cryolite (sodium aluminium fluoride), represented by some excellent specimens in its crystallised form.

### DIVISION IV. COMPOUNDS OF OXYGEN.

DIV. IV.

Cases 15, to

30.

The remaining division consists of Minerals of which *Oxygen is a constituent ingredient*, a class necessarily large on a planet with an atmosphere consisting in considerable proportion of this chemically energetic element. The rocks which constitute the earth's crust are aggregates of minerals falling under this chemical division. Here, as in the previous divisions, we distinguish the more simple kinds of combination from the more complex; and though such a distinction as is expressed by a section of oxides and a section of salts is a difficult one to define with logical precision, it yet serves the object sought in a system of classification, by bringing together compounds that most closely resemble each other, the different classes falling into a natural sequence, nearly in the order of the simplicity of their chemical formulæ.

The first section of this chemical division, the Oxides, will be found Section i. arranged in Cases 15 to 26, those containing the greater proportion of oxygen following after those that contain fewer. Commencing with basic types of oxides, we pass through certain comparatively neutral oxides (among which we must look for those members of the section which possess the most equivocal claim to a place in this section); and we then come to the higher oxides which act the part of acids in combining with bases.

The oxides include several very important minerals. First in order



Div. IV. among them is Cuprite, the red oxide of Copper, cuprous oxide. It occurs in ruby-coloured and transparent crystals of the cubic system. These are seen in the first half of Case 15, and with them are the "Tile ore," from the Urals, and the bright-red capillary deposits of Chalcotrichite. The cupric oxide, as Melaconite and Tenorite, succeeds to the crystalline oxides of Magnesium (Periclase), and of Zinc (red oxide of Zinc, or Zincite), in the other half of this Case. These are followed, first by the hydrated monoxides, including Brucite, the magnesium hydrate, which presents delicate hexagonal transparent crystals; in succession to which are minerals in which oxides of this type are associated with compounds belonging to preceding Divisions of the Collection. The lead-oxychlorides, Matlockite and Mendipite, are arranged here with Atacamite, a cupric chlorhydrate, and of Percyite, a beautiful mineral, of which one specimen, of uncertain locality, is associated with Gold. It is a hydrated combination of the oxychlorides of Lead and Copper.

The next class in the section of oxides is composed of minerals of a chemical type, similar to that of the magnetic oxide of Iron (the ferro-ferric oxide), which may in fact be viewed as a combination of ferrous oxide with ferric oxide, and thus, while possessing the formula and a place in the section of the oxides, has claims to be recognised as a salt. For the group of cubic-formed minerals to which Magnetite more especially belongs, the "Spinel Group," includes Franklinite and Chromite (Chromic-iron), which latter mineral is the source of the chrome yellow and of some other colouring matters employed in the arts. The Spinel, properly so called, also belong to it. These are aluminates of Magnesium, of Zinc, Iron, or Manganese; ferric oxide occasionally playing the part of alumina. The deep-red "Spinel Ruby" and the pale rose-tinted "Balas Ruby" are beautiful gems cut from specimens of this Mineral, of which a good assortment of crystals is exhibited. Pleonast, Gahnite, Dysluite, are opaque varieties of Spinel. To this class also may be referred the Chrysoberyl, a combination of glucina and alumina (glucinum aluminate), belonging to the same type. It is orthorhombic in crystallisation, and as a gem, known by the name of "oriental chrysolite," it presents itself as a beautiful greenish-yellow stone, equal in lustre and almost in hardness to the Sapphire. The variety Cymophane is so named from a cloudy appearance that presents itself in two of the faces of the crystal, and is retained even when the transparent stone is cut and polished. Cut *en cabochon*, *i.e.*, with a concavo-convex, or with a convex form, the less transparent specimens furnish one of the kinds of stone to which the jewellers give the name of Cat's-eye. Of the dark green variety from the emerald mines of the Ural, termed Alexandrite, very fine specimens are seen in this Case. It is amethyst-coloured by artificial light.

The next class among the oxides is that of the sesquioxides. The pure oxide of Aluminium is seen in colourless crystals of Corundum, consisting for the most part of hexagonal pyramids and prisms. With minute traces of colouring ingredients, these

crystals assume rich hues, and when transparent become gems DIV. IV.  
 conspicuous for their extensive colour-suite, that rank next in  
 value, as in lustre and hardness, to the diamond. These are the  
 colourless Lux Sapphire, the (azure) Sapphire, the Ruby, the 'Oriental-  
 Topaz,' 'Oriental-Amethyst,' 'Oriental-Emerald,' &c.; gems not to be  
 confounded with those from which they borrow their names, while  
 distinguished from these by their title "Oriental," in allusion to the  
 Eastern lands, India, Ceylon, Siam, Pegu, &c., which from the earliest  
 times have produced the gem forms of this mineral in their greatest  
 perfection. In the "Star stones" a six-rayed star is seen, of which  
 the position is symmetrical in respect to the morphological axis of the  
 crystal; and through the less pure varieties of Corundum, we descend  
 to the opaque and granular, massive, but still, from their hardness,  
 valuable states of this Mineral, of which Emery is an impure form.  
 Identical in chemical and crystallographic type with Corundum, though  
 very different in aspect both in its crystalline and massive varieties,  
 is the valuable iron ore, Hæmatite, the ferric oxide. Cases 17  
and 18.  
 A tarnish on  
 some of its crystals, especially on those from Elba, produces an irides-  
 cent effect of great beauty. With Hæmatite is placed Ilmenite, or  
 Titanic-iron, one of the ambiguous species of this class. Intimately  
 blended with the former mineral in all proportions and crystallising  
 in its forms, it yet presents the formula of titanate of Iron, a formula,  
 however, which, as containing two equivalents of metal united to three  
 of oxygen, is in fact homotypic with the sesquioxides.

The hydrates of this class include the important iron ore Limonite  
 (Brown-hæmatite), and Gæthite, which is monohydrated ferric oxide. Cases 18  
(ii.) and 19.  
 In juxtaposition with the fine Cornish specimens of this mineral,  
 from the Restormel mine, are Manganite and Diaspore, respectively  
 the monohydrated manganese and aluminium oxides, isomorphous with  
 Gæthite.

The class of dioxides is illustrated by a series of crystals and  
 other forms,—especially rich in the Cornish varieties—of Cassiterite Case 20.  
 or Tin-stone, the ore of tin: and in the same Case is placed the  
 Zircon, consisting of the associated zirconium and silicon dioxides.  
 Its crystals, like those of Cassiterite, with which it is nearly isomor-  
 phous, are pyramidal. Its pellucid varieties are gems. The dull  
 green is the Jargoon, while peculiar ("hyacinthine") red tints  
 characterize the gem known as the Hyacinth or Jacynth, of which fine  
 cut specimens are in Case 20 (iv.). The yellow and blue tints are  
 rare, but the more pellucid and colourless zircon, from its exception-  
 ally high refractive power, approaches even the diamond in brilliancy.

In the same continuous series is Rutile, the titanium dioxide  
 isomorphous with Zircon, and approximately so with Cassiterite. Case 21  
 Anatase is the same substance, also in pyramidal forms, but with dif- (i.)  
 ferent parameters; while in yet a third series of forms this trimorphous  
 titanic dioxide is to be seen as the orthorhombic mineral Brookite,  
 of which the specimens from the Snowdon district are remarkable.

In this Case is also exhibited the manganese dioxide (the "per-  
 oxide"), Pyrolusite, the mineral employed for the production of

Div. IV. oxygen gas, and for the evolution from the chlorides of their chlorine, so largely employed in the arts.

Cases 21 (ii.) to 25. The Rhombohedral system is represented in the class of the dioxides by Quartz and its varieties.

Cases 21 to 29. This important mineral is silica, the oxide of silicon (silicon being an element of the carbon group). This oxide occurs in a state physically distinct from Quartz, in the Opal, which is amorphous: specimens of it will be found at the end of the crystalline series of the dioxides. Among the purer varieties of these are the Mexican Fire Opal, and the beautiful and almost exclusively Hungarian gem, the Noble Opal, conspicuous for its fascinating play of colours. Specimens of Tridymite will be seen in Case 21; it is a crystallised form of silicic acid, with the specific gravity of opal. Its crystalline forms, however, are distinct from those of Quartz, which is the more common and more dense variety of Silica. The latter is seen in its purest form as Quartz crystal in Case 21. Its tinted specimens may vie in point of colour with jewels of denser substance and higher refrangibility. Among these are the lilac-hued specimens of the Amethyst, the Brazilian specimens of which, as well as of the yellow kind, show the "rippled" fracture which distinguishes them from the ordinary Quartz, with its smooth conchoidal fracture. They are further distinguished by their optical properties.

Cases 23 to 25. A series of minerals succeeds, formed by mixtures of the crystalline with the opaline silica, and of these with iron oxides and argillaceous and other impurities. They include the various kinds of Jasper and of Chalcedony, Prase, Bloodstone and Heliotrope, Hornstone, Carnelian, Sard, Plasma, while the various banded, ribbed, eyed, spotted, clouded, and other fantastically figured and coloured stones of the Agate kind, including Onyx and Sardonyx, in every gradation of translucency, illustrate the modes in which these mixed minerals occur, and often evidence the successive action of the processes that formed them. Of the pseudomorphism of minerals, a good example is furnished in Case 24 (i.) Haytorite, a mineral composed of a chalcedonic Hornstone, but presenting the forms of Datholite (compare Case 51).

Section ii. We next enter on the section of Oxygen Salts, the first class under which is occupied by the Carbonates. The isomorphous character of the several salts of the metals Calcium, Barium, Strontium, Lead, and Magnesium, and of the corresponding iron and manganese salts with them, finds illustrations in the long array of the anhydrous carbonates which are here exhibited, crystallised severally in forms which are equivalent or united in various proportions of admixture in the same crystal.

These carbonates are divided by their crystalline forms into two large series or groups. The first comprises those crystallising in forms on the type of Aragonite, the orthorhombic calcium carbonate. Among these are, besides Aragonite, Witherite the barium carbonate, Strontianite the strontium carbonate, and Cerussite the lead carbonate. The specimens of this last mineral and those of Witherite are especially noticeable.

The second series comprises those minerals of this chemical type



that crystallise in rhombohedral forms isomorphous with those of Div. IV. Calcite, the rhombohedral calcium carbonate. These include the magnesium carbonate, Magnesite; zinc carbonate, Calamine; and the iron and manganese salts termed Chalybite and Rhodochroisite respectively. They include also the mixtures of these in a very considerable variety, such as Dolomite, Ankerite, Brown Spar, &c. Baryto-calcite crystallises in forms of the clinorhombic system, and establishes the trimorphism of these minerals by exhibiting the barium and calcium carbonates crystallised in a third set of distinct crystalline forms. The crystals of Calcite in Cases 29 to 31, and in the fronts of Cases 27 to 29, form, with one very large crystal in a separate case in Room III., a very fine series, as well for their varied forms as for the conspicuous illustrations certain of them afford of the highly double-refracting property of the crystal. Some singular pseudomorphs from Devon, in the Chalybite Case, are well worthy of notice.

The Limestone and Dolomite rocks are formed of Minerals from this series, in various massive, granular, or crystalline aggregations, the latter of which frequently form Marbles; while into the Clay-ironstone, with which the blast furnaces of Wales and Scotland have been largely fed, spathose-iron, or Chalybite, enters as an ingredient in a high percentage.

Among the hydrated carbonates, and carbonates combined with hydrates, or with compounds belonging to the previous divisions, attention may be called to the green and blue copper ores, Malachite and Chessylite, of which latter a very fine series of crystals is exhibited. Case 34 (ii.)

Case 35 contains also fine specimens of Phosgenite, a combination of the chloride and carbonate of lead; and of Parisite, an analogous compound from the Emerald Mines of Santa Fè di Bogotá, containing the fluoride combined with the carbonate of calcium and of the rare metals of the cerium group. Case 35 (ii.)

The Silicates, occupying no less than fifteen Cases, form the next class in this section. The minerals comprised in this large, varied, and important class are arranged in series distinguished by the type of oxide that characterises the bases in the silicate. Thus the silicates corresponding to monoxide-bases (ferrous oxide, magnesia, &c.) are arrayed in one series; those the bases of which are sesqui-oxides are in another; and such as contain bases of both kinds fall into a third. The respective hydrates are comprised under the series to which the minerals of corresponding anhydrous types belong.

The first of these series is composed of such silicates as are formed by the combination of silica with monoxides only, or in which sesqui-oxides are met with only as accidental or intrusive ingredients. The anhydrous section of this series contains, among others, the following minerals. Phenakite, the di-glucinum silicate, and Willemitite, a zinc-silicate corresponding and isomorphous with it, represent a rhombohedral series of dibasic silicates. The specimens of Phenakite from the emerald mines of the Urals are extremely fine. Of the same chemical type are the minerals comprised in the Olivine group, which are orthorhombic in their forms, and include Tephroite, di-manganous Case 36 (i.)

Div. IV. silicate; Fayalite, di-ferrous silicate; with Olivine and Hyalosiderite, the magnesio-ferrous silicates of the series. Chrysolite is the name of the pale yellow gem into which the larger and clearer specimens of Olivine are occasionally cut; while the Peridot is a pistachio-green variety, of which fine crystals and cut specimens are exhibited in Case 36. Gadolinite is di-yttrious silicate (containing also cerium, &c.); and Humite, a mineral containing Fluorine, belongs also to the more basic silicates.

Cases 36 (ii.) to 38. Among the mono-silicates are arranged the large series of important minerals which form the two parallel groups of the Augites and the Hornblendes. In juxtaposition with these is seen Wollastonite, the calcium monosilicate, and the anorthic minerals Rhodonite and Babingtonite, homotypic in composition, but crystallographically differing from the other members of the series. The Augitic and Hornblendic groups present two distinct crystallographic types. In Case 36 (ii.) Enstatite, the magnesian, as in Bronzite a magnesio-ferrous monosilicate crystallises in the orthorhombic system, though with certain of the angles of an Augite; while in Diopside, and the other Augites, clinorhombic in crystallisation, part of the Magnesium is displaced by Case 38 (i.) Calcium, and also by Iron, Manganese, or Zinc. So Anthophyllite, a magnesio-ferrous monosilicate, corresponding with Bronzite, presents orthorhombic forms with angles belonging to the type of the Hornblendes, as exemplified in Tremolite and the other members of the Case 38 (ii.) group, which, however, crystallise in the oblique system. Certain varieties of Jade or Nephrite are assigned to these groups, as are also different kinds of Asbestos.

Cases 39 and 40. The hydrated section of this series contains the Serpentine and the talcose minerals. It comprises, also, Dioptase and Chrysocolla, hydrated cupric mono-silicate; Hemimorphite, the hydrated zinc silicate and Apophyllite, a hydrated potassio-calcium silicate, extraordinarily fine specimens of which are seen in Case 39, and in the glazed fronts of Cases 11 and 12.

The second series in the class of the silicates consists of those of the "sesqui-oxides." Foremost among them is the Topaz, an aluminium silicate, in which part of the silicate is replaced by an analogous Case 41 (i.) fluosilicate. The specimens of this mineral from the Ourulga river in Siberia, collected by Col. de Kokscharow, are singularly fine. They are of a delicate sherry-colour, but are preserved in the dark, as light speedily bleaches them.

The third series of the silicates is constituted of those in which the monoxides and sesqui-oxides are associated in the same mineral.

The various groups known by the general names of the Garnets, Scapolites, Idocrase, Epidote, the Felspars, the Micas, and Dichroite (with a variety of minerals resulting from its alteration) find their places in this series, into the hydrated section of which fall the beautiful and extensive varieties of Zeolites and Chlorites.

Case 42. Among these the Garnets form a group of minerals belonging to the cubic system in which the chemical type  $\left\{ (M''O)_3 (M'''_2O_3) (SiO_2) \right\}$

remains constant, while the isomorphous elements under that type replace each other in unlimited variety. Among the familiar forms of this mineral group, the violet-tinted Almandine, and the rich red Syriam Garnet are ferrous-aluminic varieties; the yellow and hyacinthine Garnets, known as Cinnamon-stone and Essonite contain calcium and aluminium: the calcium is replaced by magnesium in the deep blood-red Bohemian Garnet and Pyrope, varieties which when cut *en cabochon* are the Carbuncle of jewellery. Idocrase, a mineral with a smaller range of chemical variation than the Garnet, is represented by a series of crystals (of pyramidal forms) of remarkable variety and perfection. Epidote is also well represented by specimens from Ala and from the Obersulzbachthal. To the Epidote group also belong the minerals Case 42. Allanite, Zoisite, and Jadeite. To these succeed the various minerals Case 44. Phlogopite, Biotite, Muscovite, Lepidolite, &c., included in a group under the name of Mica. The group of Felspars follows, among Cases 44 and 45. which will be found Labradorite, with its beautiful play of colours; Case 43 (ii.) the Moonstone, a partially decomposed Orthoclase; a fine specimen of the Orthoclase called "Valencianite," from Mexico; also, fine specimens of Amazonite and other varieties of microcline feldspar. Case 46 (i.)

Dichroite (the Sapphire d'Eau of jewellers) is remarkable for its pleiochromism, a character due to the different degrees in which the crystal absorbs the light of different colours according to the planes of their vibration; the crystal when looked through perpendicularly to the basal face 001 is of a rich blue, perpendicularly to the faces 010 and 100 it is of a bluish white, and of a pale straw colour respectively. The Beryl includes the Emerald, and also the Aquamarine of the jewellers, and with Euclase occupies half of Case 46. It is an aluminogluccinum silicate, the Aluminium being in the Emerald apparently displaced to a minute amount by Chromium. Euclase is a mineral composed of the same elements, and containing a small quantity of water: the specimens of it from Siberia are of high interest. These are followed by hydrated silicates, including a very complete collection of the Zeolites, among which the Natrolite from Cases 47 to 49. India, the Scolecite from Iceland and India, and the Edingtonite from Scotland are remarkable.

The silicates proper are succeeded, in Case 50, by minerals in which silicates are associated with boric-oxide or borates. Case 50. Among these the Tourmalines present a rich assortment of valuable and beautiful specimens, conspicuous for crystals of Rubellite, from Siberia and Ava. Two very fine specimens of the Rubellite from the latter country are seen in this Case. The one remarkable for its magnitude and form was brought from Ava by Colonel Symes, to whom it was a present from the King of Ava. The other, also a very large specimen, and of deep colour, was presented in 1869 by C. S. J. L. Guthrie, Esq. These are succeeded, in Case 51, by a class of minerals Case 51. of great mineralogical interest, containing some of the rarest of the elements, and themselves of rarity; much uncertainty, however, still attaches to the chemical formulæ of several of these species. The titanates, the tantalates, and niobates, and these combined with silicates



Div. IV. zirconates, and stannates, thus link the silicates to the molybdates and tungstates, and these, in turn, are followed by the class of chromates and the sulphates. The suite of specimens of Perovskite from Siberia, the crystals of Eudyalite, of Columbite, of Fergusonite, and the specimens of Tscheffkinite, are especially observable for their excellence or their rarity.

Cases 53 to 55. Among the anhydrous species in the sulphates, attention may be called to the specimens of Celestine (strontium sulphate) from near Bristol, and to the Anglesite (lead sulphate) from Pennsylvania and from Monte Poni. Gypsum, or Selenite, the hydrated calcium sulphate, is an important mineral as yielding Plaster of Paris by the expulsion of its water. A magnificent specimen of this mineral, as remarkable for its size as for the grouping of its crystals, presented by His Royal Highness the late Prince Consort, ornaments a window in Room II. It was found at Reinhard's-brunn, Saxe-Coburg.

Case 57. Adjoining these are a few minerals of the greatest rarity and interest. The crystals of Linarite are unique, and the specimens of Caledonite and Lanarkite, of Leadhillite, an oxy-sulphate of lead, and of the rare mineral Connellite, are among the finest known of these British species.

Cases 56 to 60. The borates and the class of nitrates occupy part of Case 56; and thence to Case 60, the Cases are occupied by the class which includes the phosphates and arsenates, in which the isomorphism of the corresponding compounds of the arsenoid element Phosphorus, and of Arsenic, is so complete that the salts of their acids cannot be well classified apart from each other. With these also the Vanadates find their place, as being isomorphous with them.

Here may be seen fine crystals of Erythrine, the beautiful cobalt arsenate; specimens of Haidingerite (Case 57), and of Erinite (Case 57); crystals of Lazulite (Case 58); very fine suites of Uranite (phosphate of Copper and Uranium), and of Autunite; the beautiful blue Cornish mineral Liroconite; and splendid specimens of Apatite, Mimetesite, and Pyromorphite.

Div. V. Division V., occupying two half Table-Cases in Room I., is constituted by certain organic compounds, which as occurring in the earth with constant and definite characters, independent of organic structure, find their place in a Mineral Collection. Among these, Amber, in ancient times ranking in value with the gems, is here exhibited in a large series of specimens.

In Room II. will be seen two half Table-Cases adjoining the wall, in which is arranged an extensive and instructive series of pseudomorphous minerals forming Division VI. They illustrate the decomposing influences to which many minerals have been subjected, and they throw valuable light on the order of succession in which, and the conditions under which, particular minerals have been formed and deposited.

NEVIL STORY-MASKELYNE.

## DEPARTMENT OF BOTANY.

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THE series of specimens selected from the Botanical Collections for exhibition consists chiefly of fruits, stems, and such vegetable structures as cannot from their size and texture be incorporated with the Herbarium (or collection of dried and mounted specimens), but are capable of being advantageously exhibited. They are arranged in two rooms on the upper floor of the Museum (Nos. 17 and 18 on the plan) which are entered by a doorway on the Eastern side of the Central Zoological Saloon.

The specimens exhibited are arranged, as far as possible, in accordance with their natural affinities, beginning with the most lowly organised members.

A small collection placed in the Table Cases of the central avenue of the First Room exhibits by specimens the principal characters which distinguish the great divisions of the vegetable kingdom, and at the same time supplies a key to the main body of the collection. The Cases on the left side of the avenue (A to D) are devoted to the Cryptogams or Flowerless Plants. The Fungi occupy the first Case next the entrance, and are followed in succession by the Sea-weeds (*Algæ*), Lichens, Mosses, Liverworts (*Hepaticæ*), Ferns, Clubmosses, and Horsetails. The Cases on the right side (E to H) illustrate the Phanerogams or Flowering Plants, which are divided into Monocotyledons, Gymnosperms, and Dicotyledons. Each case contains a reference to the Wall or Table Cases where the more extensive series of specimens are exhibited.

The main series is arranged in order along the Wall Cases, beginning with that on the left on entering the First Room, continued along the left side of both rooms, and returning along the right side. This order is indicated by the numbers painted on the Cases. With one or two exceptions, the Table Cases are supplementary to the Wall Cases, the specimens in

the one further illustrating the groups in that to which they are opposite.

FUNGI.—This class of cellular cryptogams is illustrated in Cases 1 to 4 by a series of models principally prepared by James Sowerby while engaged in the publication of his "Figures of English Fungi," and representing for the most part the identical subjects depicted in that work. They are arranged and named according to Cooke's "Handbook of British Fungi." The first two Cases contain the gill-bearing forms (*Agaricini*), to which the common mushroom belongs; the third Case is chiefly filled with the *Polyporei*, the fruiting surface of which is composed of pores or tubes; among these may be noted the edible *Boletus edulis*, and the dry-rot, *Merulius lacrymans*; the shelves of the lower division contain *Clavarias* and gelatinous *Tremellas*; on the upper shelves of the fourth Case are placed specimens of the stinking *Phalloidei*, star-shaped Geasters, and puff-balls or Lycoperdons; some of the smaller sporidiiferous fungi are placed on the other shelves of this Case, among which the Truffles (*Tuber*) may be noted.

ALGÆ.—The most remarkable sea-weed exhibited in Case 5 is the large tree-like *Lessonia*, which forms extensive submarine forests in the Patagonian seas. The stem increases in thickness by the addition of external concentric layers, giving it to the eye the appearance of exogenous wood. The *Durvillea*, placed near it, is an inhabitant of the same seas; it has rope-like stems from 500 to 1,500 feet long, and its fronds are composed of enormous honeycomb-like cells. From the Cape of Good Hope come the inflated stems of the huge *Ecklonia buccinalis*. Some large stony coralline sea-weeds are placed on the shelves.

LICHENS.—On the shelves are placed specimens of *Cladonia rangiferina*, the reindeer moss, *Rocella tinctoria*, the Orchella-weed, from which important dyes are obtained, *Gyrophora umbilicaria*, the Tripe-de-roche of Arctic voyagers, and other interesting forms.

MOSESSES.—Some of the larger forms of this class are exhibited on the shelves; but the small size of the Mosses and Lichens are better fitted for the closer inspection obtained in the Table Cases, where a larger series is exhibited.

The VASCULAR CRYPTOGAMS are placed in Case 5. The Club-mosses (LYCOPODIACEÆ) are represented by some of the larger forms, and the Horse-tails (EQUISETACEÆ) by fine specimens of the underground rhizomes and stems of *Equisetum maximum*, the largest of the British species. The Ferns (FILICES) are the most important of the vascular cryptogams. The back of the Case contains specimens of the fronds of *Alsophila pinnata* from Chili, and of *Thyrsopteris elegans*, the fertile portions of which are so constricted as to bear the globose fructification on the midrib. The longitudinal and transverse sections of fern stems placed here and in the Table Cases (3 and 4) opposite show that the stem is composed of a central cellu-



lar substance surrounded by the vascular structures, which form a close cylinder perforated at regular intervals by narrow meshes, from the out-turned edges of which the vascular bundles are given off to the fronds. The sections of the common male fern (*Lastrea Filix-mas*), show that its humbler stem has a similar structure to the arborescent forms beside it. A large series of fern-stems occupy the eastern wall of the inner room.

The Wall Cases on the left-hand side of the next room are devoted to Monocotyledonous plants.

The GLUMACEÆ, comprising the grasses and sedges, are represented in Case 7. Specimens of the principal grain-producing *Gramineæ* are exhibited; among them is placed the so-called mummy-wheat (*Triticum turgidum*), erroneously supposed to have been obtained from grains found in a mummy-case, which retained their vitality. The most authentic instance of old seeds germinating is to be seen in Wall Case 22, where are exhibited the seeds of *Nelumbium speciosum*, from the herbarium of Sir Hans Sloane, which were germinated by Robert Brown in 1850, when they were 150 years old. Several species of *Sorghum* and *Panicum*, extensively cultivated in tropical regions as sources of food, are exhibited, as well as a large series of the cobs of Maize (*Zea Mays*), and a complete plant grown at Fulham with three perfect cobs below, and the terminal staminal (male) flowers above. On the floor of the Case is placed the fantastic, branching underground stem of the Bamboo, marked with the linear scars of the leaf-scales, the large round scars in opposite rows of the bases of the aerial stems, and the smaller ones of the roots. Similar creeping stems of *Arundo Donax* and *Carex paniculata* are placed beside it. Some stems of the Bamboo are seen on the back of the Case, among them two with short triangular joints; additional specimens, some of enormous size, are placed at the west end of the room, one of which, grown at Chatsworth, attained a height of forty feet in six weeks, being at the rate of a foot a day. Some seeds of Bamboo are placed in the Wall Case, and the curious fleshy and pear-shaped fruit of a species from Arracan (*Melocanna bambusoides*). Specimens of *Arun-dinaria Schomburgkii*, the reed through which the small arrows dipped in the virulent Woorali poison are blown by the native Indians of Guiana; the smooth and straight joints attain a length of sixteen or seventeen feet. The sides of the Case contain specimens of the light and elegant inflorescence of two species of *Gynerium*,—*G. saccharoides*, from Equinoctial America, and *G. argenteum*, the Pampas grass of Brazil. The *Cyperaceæ* are represented by large specimens of the Egyptian Paper-reed (*Papyrus antiquorum*), placed against the back of the Case, and a smaller specimen from Sicily. The triangular cellular stem of this plant was cut into thin slices; and these slices, after being beaten together and pressed, formed the famous paper of the ancients. Specimens of suffrutescent Eriocaulons from Brazil are placed on the sides of this Case.

In Case 8 are some specimens of arborescent JUNCACEÆ. *Kingia australis*, from Western Australia, is a tall, palm-like tree, the stem of

which is covered with the permanent bases of the leaves, and bears at its summit a tuft of long grass-like leaves, and numerous leafy peduncles terminating in dense globose heads of flowers. A tall stem of this plant is placed against the Western Wall of this room. It is cut longitudinally, so as to exhibit the remarkable structure of its interior. Specimens of the nearly allied *Dasypogon Hookeri*, also from Western Australia, are placed in this Case, as well as the remarkable South African plants, *Prionium Palmita*, great woody rushes which grow in beds of rivers, often increasing to such an extent as to choke them. The stem attains a height of ten feet; it is covered by the wiry fibres of the bases of the old leaves, which are so strong as to be made into brushes. The lower part and back of the Case are occupied by specimens of *Xanthorrhæa*, the Black-boys or Grass-gun trees of Australia. The stems are generally simple, sometimes branched, as in one of the specimens. The permanent bases of the leaves form a thick covering round the stems, protecting them from destruction by the fires that blacken their exterior, whence the origin of the colonial name of Black-boy. A resinous secretion occupies the space between the trunk and the leaves, and connects the leaves together. The stem is crowned with a tuft of long wiry grass-like leaves, from the centre of which rises the flower stalk, with its great cylindrical spike of flowers, several specimens of which are in the Case. One of the most remarkable species of arborescent Liliaceæ is illustrated in Case 9, viz., the Dragon Tree of Teneriffe (*Dracæna Draco*). Several branches are shown, and some longitudinal and transverse sections exhibit the internal structure. At first and for many years the trunk is simple, but in course of time it branches, and increases in diameter by external additions. A small portion of the famous tree of Orotava, which perished a few years ago, is placed on one of the shelves. This endogenous tree was seventy-nine feet in circumference at the base, and innumerable branches sprang from the summit of its huge trunk. The small order VELLOZiaceæ is represented by a fine series of arborescent Vellozias. They are natives of dry mountainous regions especially in Brazil, to the vegetation of which they give a special character. A fine large specimen occupies the body of the Case, and several smaller forms, some cut longitudinally and transversely to show their internal structure, are placed on the shelves, as well as two allied species from Tropical Africa, presented by their discoverer, the late Dr. Welwitsch. The stems of these plants are small; the diameter is increased by the imbrication of the long clasping leaf bases, and by the development towards the base of roots descending between the stem and the leaf bases. Specimens of the tuber-stem of the Elephant's-foot (*Testudinaria elephantipes*), from South Africa, and a large Orchid stem (*Dendrobium taurinum*), are also placed here. To the back of the Case are attached specimens of the inflorescence and fruit of *Urania speciosa*, the Traveller's tree of Madagascar, so called from its leaves when cut yielding an abundant and refreshing clear drink to the thirsty traveller.

The order PALMACEÆ occupies the four Cases 10-13, which follow.

This order is of great importance to the inhabitants of tropical countries, as it supplies from one species or other, and sometimes from a single species, almost every article needed by them for food, clothing, shelter, or labour.

Case 10 is occupied by specimens of the tribe COCOINÆ. Of the Cocoa-Nut itself (*Cocos nucifera*), may be noticed a section of the stem; a large bunch of fruits still attached to the branched spadix; some separate fruits of different forms; a large bottle, forming part of Sir Hans Sloane's Collection, and containing both male and female inflorescence; and some smaller bottles, one containing germinating nuts in various stages of advancement. At the back of the Case is a fruit-bearing spadix, together with an unopened spathe and a frond, of *Cocos coronata*, from Brazil, the fruits of which are scarcely more than an inch in length. By the side of these is a fine specimen of the fruit-bearing spadix of *Maximiliana regia*, inclosed in its singular boat-shaped spathe. Below are numerous male and female spadices, the latter bearing fruit, of the Oil-palm of Western Africa, *Elæis guineensis*, so important for the supply of palm-oil.

Case 11 contains specimens of the tribes BORASSINÆ and CORYPHINÆ. To the first of these tribes belong several interesting palms, such as:—*Borassus flabelliformis*, the Palmyra palm, widely distributed over tropical Asia, and applied by the natives to uses which are almost innumerable. It is the great source of the toddy or palm wine. *Lodoicea Seychellarum*, confined to the Seychelles, is called the "Sea Cocoa-nut," because it was for a long time only known from the nuts found floating on the sea or cast ashore, and it was believed to be a submarine palm. The immense fruits weigh from thirty to fifty pounds. Externally they are covered with a thick fibrous bark, which contains usually one, sometimes two, rarely three, nuts with hard black shells, each divided half way down into two lobes. A fine specimen with three nuts is exhibited. The seeds take ten years to ripen. *Manicaria saccifera* is remarkable among palms for possessing entire leaves, which are of great size, being frequently thirty feet long, and from four to five feet wide. The inflorescence and its curious spathe is placed on the left side of the Case. On the same side may be seen the fruits of several species of *Hyphane*. This is the only genus of palms which is normally branched. To it belongs the Doum palm (*H. thebaica*), the fruit of which is eaten by the poorer classes in Egypt; it has a taste like gingerbread. Fruits of two other species are placed in the Case, *H. coriacea* from Madagascar, and *H. Welwitschii*, recently discovered by the illustrious traveller after whom it is named in Central Africa.

To the tribe CORYPHINÆ belongs the only indigenous European palm, *Chamærops humilis*, the northern limit of which is about Nice. Mr. Fortune has introduced another species (*C. Fortunei*), which is sufficiently hardy to stand the winter in the South of England. The walking-sticks called "Penang Lawyers" are the stems of *Licuala acutifida*. The famous Talipot palm (*Corypha umbraculifera*) (a great fan-shaped leaf of which is placed over the Cases) belongs to this



tribe, as does also *Livistona*, *Sabal*, and *Copernicia*, specimens of which will be found in the case. The "Wax Palm" of Brazil is a species of the last of these genera (*C. cerifera*). The young leaves are coated with wax in such quantity that it is collected and exported to Europe. Fine trunks of this and other palms are placed at the west end of the room. The most important member of this tribe is the Date palm, *Phoenix dactylifera*, the fruit of which is so important an article of food in Northern Africa and Eastern Asia.

Cases 12 and 13 contain specimens of CALAMINÆ, a tribe easily distinguished by their scaly fruits. The genera with erect trunks and a tree-like habit, are represented in Case 12. Some of them attain a great height. *Mauritia flexuosa* rises 100 or 150 feet above the waters or swampy banks of the Amazon. The inflorescence of both sexes of *M. aculeata* are placed here, as well as several specimens of those of *Raphia Ruffia*, and *R. vinifera*. The Raphias grow in swampy places, and have short, stout trunks, with great masses of inflorescence, and gigantic leaves, 50 or more feet in length. But the most important of the tree-like CALAMINÆ are the true Sago palms (*Metroxylon*). The inflorescence and fruit of *M. Rumphii* are placed on the back of the Case. The sago of commerce is obtained from the soft inner portion of the stems of this species, and of *M. lœve*, which grows along with it, forming dense forests in the swampy plains of the Moluccas. A single tree will furnish as much as 600 or 800 pounds of sago. Case 13 contains the genera which form large dense spiny bushes in tropical jungles, and send out their long slender stems to climb over and amongst the branches of the forest trees, supporting themselves by strong hooked spines attached to their leaf stalks, or borne on whip-like tails formed by the prolongation of the midrib beyond the leaf. Such are *Plectocomia elongata*, the branching flower spikes of which are placed on the back of the Case, *Eugeissonia tristis*, and the different species of *Zalacca* and *Calamus*. Several species of *Calamus*, *C. Ratang*, *C. Royleanus*, &c., supply the Rattan canes, so extensively used for chair bottoms and light furniture, and from another species (*C. Scipionum*) are made the walking-sticks known as Malacca canes.

Case 14 is chiefly devoted to the tribe of ARECINÆ. At the back are specimens of the wood and foliage of *Enocarpus Bacaba*, from the Amazon regions, and of the inflorescence inclosed in its double canoe-like spathe; several species of *Areca* are placed here, one of which, *A. Catechu*, has for its fruit the well-known Betlenut. The hard albumen of the conical nut is cut into narrow pieces, and a portion is rolled up with a little lime in the leaves of the betle pepper (*Chavica Betel*). This pellet when chewed is hot and acid, and produces a somewhat intoxicating effect. Two other important palms are found in this Case, *Caryota urens*, a native of India, and *Arenga saccharifera*, from the Indian Archipelago. Both supply sugar, palm wine, sago, fibre for cordage, and many other useful articles, to the inhabitants of tropical Asia. A fine fruit of *Phytelephas*, the Vegetable Ivory, a somewhat aberrant genus of palms, is placed under

a glass cover over the Table Case 8. The fruit consists of six or seven drupes, each containing as many seeds, the albumen of which has the hardness and general appearance of ivory, and is used for the manufacture of small objects. It is a native of the northern parts of South America.

Case 15 contains stems, foliage, and fruits of different species of *Pandanus*. The stems are repeatedly branched, and marked with the scars of the old leaves. The long and narrow leaves are borne in a triple spiral series at the ends of the branches, and as they suggested the tuft of leaves which crown the pine-apple, the name of Screw-pine was given to them. The fruits are composed of many drupes, joined together so as to form large cone-like heads. These plants are natives of Asia and its isles, abounding near the sea. They are remarkable for the thick aerial roots which are thrown out from the stem, forming buttresses around its base.

The Wall at the further end of this room is occupied by numerous specimens of TREE-FERNS. The following deserve special notice:—A stately trunk of *Alsophila Brunoniana*, divided because of its length into three portions, being altogether forty-five feet long, from the Mountains of Sylhet; two trunks of *Alsophila contaminans* from the Phillipine Islands; two fine species of *Cyathea*, from New Zealand, the pith of both yields a farinaceous substance resembling sago, which is used by the natives as food; a large trunk of *Dicksonia antarctica*, covered by a thick mass of matted aerial roots; and a specimen of the Tree-fern of the Cape of Good Hope (*Hemitelia capensis*).

The first three Wall Cases, returning along the right side of the room, together with the Table Cases in front of them (24 to 27) are devoted to GYMnosperms.

The CYCADEÆ are arranged in Case 16, and consist of stems and sections of the stems of *Cycas* and *Encephalartos*; of leaves of *Cycas circinalis*, *Encephalartos horridus*, *E. Caffer* and *Dion edule*, and of a model of the fruit of *Encephalartos Caffer*, presented by James Yates. In the Table Case opposite are a series of smaller specimens of Cycadean fruits, chiefly presented by the same gentleman, illustrating various species of *Cycas*, *Macrozamia*, *Encephalartos*, *Dion*, *Zamia*, and *Ceratozamia*, among which may be particularly noticed a cone of *Cycas revoluta*, terminating in a series of foliaceous scales, a cone of *Cycas circinalis*, a double-headed cone of *Macrozamia spiralis*, cones of *Zamia Yatesii*, *Dion edule*. A fine female cone of this last species is placed in a glass cover over the case.

In Case 17 are numerous specimens illustrative of the Araucarian division of CONIFERÆ; sections of the stem of *Araucaria Cookii*, from the Isle of Pines, one of which exhibits the mode in which the whorl of branches is given off; a polished knot of *Araucaria excelsa*, with a section of the same; and cones of *Araucaria Brasiliana*, *A. Bidwillii*, *A. excelsa*, and *A. Cookii*.

Case 18 contains specimens in continuation of the family of CONIFERÆ, the most remarkable of which is a section of the trunk

and of a large branch of a Cedar-Tree planted by Sir Hans Sloane, in the Garden of the Society of Apothecaries at Chelsea in the year 1683, and cut down a few years ago, exhibiting 153 concentric annual rings.

There are also specimens of the wood and bark, leaves and fruit, of *Sequoia gigantea*, the Wellingtonia or Mammoth Tree of California, which grows to the height of 300 or 400 feet, with a circumference at the base sometimes amounting to 100 feet, or even more; parts of beams of the Cedar of Lebanon, *Pinus Cedrus*, from the ruins of the Palace of Nimroud, where it was found by Mr. Layard; a branch and fruit of *Widdringtonia Wallichii*, from the Cedarberg, Cape of Good Hope; cones of *Dammara australis*, *D. alba*, *D. vitiensis*; a section of the wood of *Dammara australis*; and numerous specimens of cones, chiefly from the East Indies and California. Additional specimens of cones and woods are placed in the Table Cases opposite.

Specimens of ANGIOSPERMOUS DICOTYLEDONS occupy the remaining Cases on this side of the room.

Case 19 contains specimens of *Parasitic Flowering Plants*, which not only grow upon other plants, but live upon them and obtain nourishment from their tissues. These plants present considerable modifications of the ordinary type of phanerogams, mostly referable to reduction of the nutritive organs. The root cannot be said to be present in any, the connection with the nurse-plant being effected by apposition of its cells with those of the parasite. The stem may be altogether absent or may be represented by a short axis with a few brown or coloured scales, or by a creeping rhizome; leaves and green colouring matter (*chlorophyll*) are entirely absent. There is, however, a group of true parasites which possess green leaves or green stems, of which the mistletoe is a familiar example. Parasites must not be confounded with *Epiphytes*, such as many Orchids, Bromelias, and other so-called "Air-plants," which, though they have no connection with the soil, do not draw their nourishment from the plants upon which they grow; nor with climbing plants like the Ivy, which has its true root in the ground, and only uses the small rootlets on its stem as holdfasts. There are, however, many instances of partial parasitism and of a parasitic condition being assumed for a part only of the life of a plant. The plants exhibited belong to many different natural orders, for parasitic habits are found in species with very different floral structure upon which their systematic position depends. There are, however, very few known cases of parasitism among Monocotyledons.

The Walls of the Case are occupied by an instructive series of specimens presented by the Rev. R. Blight, illustrating the parasitism of the Mistletoe (*Viscum album*) on the following trees, Acacia, Ash, Poplar, Whitethorn, Apple, Maple, Lime, Willow and Oak: it is known to grow on more than fifty different kinds of trees, but very rarely on the oak, only fourteen cases of its growth on this tree being at present known in England. The specimen on the right-hand side exhibits well the conical processes of the Mistletoe wood



perforating or penetrating the wood of the Lime along the course of the medullary rays. Specimens of another species of *Viscum* from Brazil, showing the mode of attachment, will be seen at the bottom of the Case on the left hand-wall. The singular productions called "Wooden Roses," so common in Mexico and Guatemala, of which there are also examples on the Walls of this Case, are produced by the decay of various soft-wooded species of *Loranthus*, a very large parasitic genus, of which one species is European, a specimen of which is exhibited. In the "Wooden Rose" the base of the parasite spreads out upon the wood of the supporting branch, which becomes hypertrophied from the demands of the parasite for nutriment. Some dried specimens of other nearly allied genera occupy the floor of the Case, including *Arceuthobium Oxycedri* of S. Europe, a small leafless plant growing on a species of juniper, and examples of the remarkable genus *Myzodendron* of Patagonia, the seeds of which possess long feathered processes which curl round the branches of other trees, and so retain the seed till germination has occurred and the parasite obtained a hold.

On the three upper shelves are placed a series of specimens of plants of the natural order BALANOPHORACEÆ. From their want of any green colour and of leaves, as well as in their form, they present a remarkable outward similarity to *Fungi*, but they possess true flowers, though small and of simple structure. There are about thirty-five species known, ranged under sixteen or seventeen genera, of which *Balanophora*, *Mystropetalum*, *Langsdorffia*, *Phyllocoryne*, *Lophophytum*, *Rhopalocnemis*, *Helosis*, and *Cynomorium* are represented here. Most are inhabitants of the tropics, but *Cynomorium coccineum* reaches to the islands of Sicily, Malta, Gozo, and Lampedusa, in the Mediterranean, where it has long been collected for use as a styptic, and sold under the name of "Fungus Melitensis," as a remedy for dysentery. All these plants are parasitic on the roots of others, usually oaks, maples, vines and smaller shrubs, to which they are attached by a tubiform rhizome, often of large size but of slow growth.

On the shelf nearest the front are placed specimens of *Hydnora africana*, from the Cape of Good Hope, a root-parasite on Euphorbias; *Cytinus Hypocistis*, which is not uncommon in the Mediterranean region, growing at the foot of species of *Cistus*, and *C. Americanus*, a little known species from tropical America. Both these genera are considered to belong to a single natural order, the *Cytinaceæ*. *Hydnora* possesses a prostrate black angular rhizome, from which arise the fleshy large solitary pear-shaped flowers, remarkably like such fungi as *Geaster* or *Scleroderma*. They are eaten by the natives of S. Africa. *Cytinus Hypocistis* has small yellow flowers in clusters and no rhizome.

On the upper shelf, in the base of the Case, are specimens of *Rafflesia Arnoldi*, a native of Sumatra. This remarkable parasite consists merely of a gigantic flower of very simple structure, measuring often three feet in diameter, which is attached by its base

to the roots or stems of species of vines. The buds, of which there are three dried specimens on the shelf, are like small cabbages; they take three months to expand. There are several other species of this genus with smaller flowers. On the second shelf will be seen some branches of a spiny *Astragalus* from Persia, attacked by a species of *Pilostyles*, another genus of RAFFLESIACEÆ, consisting also only of small fleshy flowers rising from the stem of the supporting plant. Another species (*P. æthiopica*), from tropical Africa, is preserved in spirit. A very large number of *Fungi* are parasites on other plants, on animals, and even on man. Examples of some of these will be found in their systematic position in Table Case A.

Case 20 is occupied in the upper part with the leafless, spine-covered, fleshy stems of the CACTACEÆ, natives of tropical America. In the centre is a specimen of *Cactus senilis*. A fine flowering head of this stem is placed under a glass cover over the opposite Table Case. The under part of the Case presents some remarkable illustrations of the effect produced by incisions through the bark and into the wood of living trees, in portions of trunks of the tree furnishing the Winter's Bark (*Wintera aromatica*), from the Straits of Magellan, which exhibit inscriptions made during the voyages of Bougainville (1767) and Cordoba (1786), and having been cut down by Captain P. P. King, R.N., in the year 1832, the number of concentric layers was found exactly to coincide with the number of intervening years.

An interesting set of specimens occupy the Table Case (28) opposite, showing the attempts made to repair injuries done to the stems of trees. In the two adjoining Table Cases (29, 30), small specimens are exhibited, showing remarkable forms of pith, bark, wood, and other structures in the stems.

On the back of Case 21 are placed several of the Lianas of tropical forests. They belong to different natural orders. Hanging perpendicularly or obliquely from the trees, they make the forest almost impassable to man, but are specially adapted to the arboreal habits of the monkeys, tiger-cats, and other inhabitants of the forests. Their weight, increasing as they grow, becomes at length too great for the supporting trees, and these yielding, give to the lianas the most extraordinary contortions. On the shelves at the base of the case are placed a large menispermous root, which supplies tapioca, the creeping rhizome of the yellow Water-lily, and seeds of *Nelumbium speciosum* which germinated in 1850, after they had been 150 years in the collection of Sir Hans Sloane. Also specimens of the Rose of Jericho (*Anastatica*), a small annual growing in arid places in Palestine and neighbouring countries. When it has seeded, the branches curl inwards, forming a ball, which when loosened from the soil, is driven about by the wind. It is remarkably hygrometric, the whole plant expanding when placed in water, no matter how dry it has become.

Case 22 contains further examples of noteworthy Dicotyledonous

stems. Among those calling for special mention are the Rice-paper plant, *Tetrapanax papyrifera*, of China, remarkable for its large, soft, solid pith, from which are dexterously cut the thin slices of the so-called rice-paper used by the Chinese for water-colour paintings; *Lagetta lintearia*, or Lace-bark of the West Indies, the inner bark of which can be, after maceration, split up into layers of beautifully interlaced fibres resembling lace; the Cork-oak, *Quercus suber*, of Spain and North Africa, the outer layers of the bark, which increase annually, ultimately possess great thickness, forming cork; a section of the stem of *Urtica gigas*, a gigantic species of nettle forming a large tree in Northern Australia. The large woody blunt prickles on the stem of a species of *Xanthoxylum* from the Cape (called "Hercules' Club"), and the internal structure of the stem of *Clematis hexapetala*, at the back of the Case, are also deserving of attention, as well as the singularly lobed and channelled trunk of the Paddle-wood of Guiana, *Aspidosperma excelsa*.

In Case 23 are placed on the walls and shelves some fruits of the Gourd and Pea families (*Cucurbitaceæ* and *Leguminosæ*), the forms of some of which are very singular. On the floor of the Case are sections of the stems of trees of the families *Leguminosæ* and *Myrtaceæ*. Among these some of the gum trees (*Eucalyptus*) of Australia are noticeable for their inner bark, which splits up into papery layers. A section of a very large stem of the Tamarisk (*Tamarix gallica*) from Mentone, and of the Ivy (*Hedera Helix*) from Kent, are also exhibited.

Case 24 is occupied by further specimens of Dicotyledonous woods and fruits. On the shelves are placed the fruits of various species of *Lecythis* from Brazil, called "monkey-pots," which contain the seeds known as "Sapucaia nuts;" of the closely allied *Bertholletia excelsa*, the seeds in which are the familiar "Brazil nuts;" of *Theobroma Cacao*, from the seeds of which are made cocoa and chocolate; of the gigantic Baobabs (*Adansonia digitata* of Africa and *A. Gregorii* of Australia) and other plants. In bottles are specimens of cloves and nutmeg, the first the unopened flower-buds of *Caryophyllus aromaticus*, the second the seed of *Myristica moschata*, the aril or inner covering of which forms "mace." On the floor are sections of the stems of various trees, including the *Proteaceæ* and *Casuarinæ* of Australia, and the *Oreodaphne foetens* of the Canary Islands, remarkable for the persistency of its very disagreeable odour, which is undiminished after more than a century's preservation.

The Wall Cases in the next room contain a selection from the extensive collection of FOSSILS bequeathed by Robert Brown, and other specimens since acquired.

Case 25 contains specimens of fossil FERNS. On the upper shelves are numerous stems of different species of *Psaronius*, invested with thick coverings of aerial roots. They are from the Carboniferous and Permian strata of Saxony and Bohemia. Fronds of *Palæopteris hibernica*, from the Devonian rocks of the South of Ireland, the



lower fruiting pinnules of which exhibit small bivalved capsules like those of the living British *Hymenophyllum*. Larger specimens of *Psaronius* from the coal-fields of Ohio occupy the floor of the Case.

The ARBORESCENT CRYPTOGRAMS of the Palæozoic rocks are represented in Case 26. Several specimens of the genus *Ulodendron*, showing the characteristic scars of the aerial roots, are placed on the upper shelves; one of them, *U. minus*, has the tissues of the vascular axis still preserved. On the next shelf are specimens of the stems, foliage, and fruit of *Calamites*, a plant nearly allied to the existing *Equisetum*. Below them are placed a series of specimens from the Devonian Rocks of Gaspé, Canada, presented by Principal Dawson. Among them are specimens of the roots, stems, leaves, and fruits of his *Psilophyton princeps*, stems of *P. robustius*, &c. Here also are two specimens of *Sigillaria oculata*, one of them showing three transverse markings produced by seasonal or other interruptions in its growth. A section of *Sigillaria* from the tufaceous rocks of Arran, Scotland, enclosing stems of several other plants, all exhibiting the details of their structure. A large slab presents a repeatedly branching specimen of *Lepidodendron*, with leaves attached, from the Halifax coal-field, presented by J. Waterhouse, Esq.

Case 27 contains specimens of PALM STEMS, chiefly from Antigua. Many of these exhibit the perishable tissues of the plants preserved in the most exquisite manner in imperishable silex, and one specimen especially shows the delicate leaves of the unopened terminal bud, with every detail of the internal structure converted into translucent calcedony.

The fossil CYCADEÆ occupy Case 28. On the upper shelf and on the floor are placed stems of *Mantellia*, from the "Dirt-bed" of the Isle of Portland, where they are known as "Crows' nests." The next shelf contains specimens of a remarkable extinct form *Bennettites*; two species, *B. Saxbyanus* and *B. Gibsonianus*, are from the Secondary rocks of the Isle of Wight; and a third, *B. Peachianus*, from those of Sutherlandshire. The details of their fruit are exhibited in the transparent sections placed in the Table Case opposite. Specimens of one species of *Yatesia*, from Cambridgeshire, and three from Sutherlandshire, are placed on one of the shelves, and near them are a series of Cycadean cones from the Wealden of the Isle of Wight.

Case 29 contains specimens of fossil CONIFERÆ. This Order makes its appearance early in the rocks of the earth. The Devonian and Carboniferous measures contain species belonging to two distinct groups, transparent sections of which are placed in the Table Case opposite. Two forms of *Trigonocarpum* from the coal measures, believed to belong to Taxineous conifers, are placed in this case. Coniferous wood is abundant in Secondary and Tertiary strata, and there are here specimens from the well-known land surface in the Purbecks of the Isle of Portland, from the Cretaceous rocks of Maid-

stone, from the Wealden of the Isle of Wight, and from other formations and localities. Cones of several species of Pines are placed on the shelves, and microscopic sections showing the seeds are placed in the Table Case.

Woods belonging to the more highly organized ANGIOSPERMOUS DICOTYLEDONS are contained in Case 30.

A large Exogenous trunk, completely bored by *Teredina personata*, a mollusk allied to the Shipworm, is placed at the end of the room. It had floated in the Tertiary seas until it was completely destroyed by this boring shell, and was ultimately buried in the London clay. Smaller fragments of wood from Tertiary strata bored by the same, and a fragment from the Greensand by a similar mollusk are placed in Case 6.

The series of fossil remains is continued in the table cases opposite. Case 33 illustrates the condition of plant remains in which the substance of the original organisms continues, but is more or less altered. Various stages from ordinary wood to coal are represented by different specimens. The scarcely changed wood from one of the piles of old London Bridge, from the royal palace at Nineveh, and from a submarine forest in Somersetshire, lead on to the more highly altered woods and leaves from the Brown-Coal of Germany; and these are again succeeded by the Coniferous wood and jet from the secondary rocks of Britain, and lastly by true coal. Illustrations are also shown of similar changes produced more rapidly under the influence of heat in the different grains obtained after the famous fire in Tooley Street, in 1861, and in a specimen of linseed charred by heating in the confined hold of the vessel in its passage from the Black Sea to the port of London. In the next case (34) are placed specimens in which the plants are represented by amorphous casts, or by mineral pseudomorphs of the original structures. In Cases 35 and 36 are placed a series of sections of fossil plants fitted for microscopic examination and exhibiting their minute structure. The sections are arranged in the systematic order observed throughout the rooms. A few cellular cryptogams begin the series. Then an extensive series of vascular cryptogams from coal measures, including the fruits and stems of Ferns, Calamites, and Lycopods. Then follow in Case 36 a few palm stems, a series of the fruits and stems of Conifers, and several angiospermous Dicotyledons, including several specimens from Tertiary rocks of England.

On the end walls of this room are hung a selection of drawings of Australian plants from the large series made by Ferdinand Bauer. The original sketches were drawn in Australia when he accompanied Robert Brown as Natural History Artist in Capt Flinders' expedition. The finished drawings were made between 1805 and 1813 after his return to England. The specimens selected illustrate some of the more remarkable forms of Australian Orchids.

Below these drawings are placed sections of Exogenous stems, among

which may be noticed large trunks of *Quercus alba* and *Juglans nigra* from Upper Canada, and of Gum-trees, Acacias &c., from Australia.

There still remains to be noticed the large series of specimens of the natural order *Proteaceæ*, exhibited in Table Cases 7-9 and 12-18 in the Inner Room. This order has been selected because it consists of a group of plants which are very distinct in many important characters from their nearest allies, and yet have a remarkable variety and diversity amongst themselves in their habit and foliage. They are chiefly found in Australia (where they form one of the most striking peculiarities of the vegetation), and in South Africa; a small group exists in South America, and a few species with Australian affinities pass northward through the Pacific Islands into Continental Asia. The order was represented in Europe by many species during the Tertiary period; their foliage is frequent in pipe-clay beds of the Isle of Wight, and the section of a stem from the Crag is exhibited in Table Case 30. An attempt is made here to illustrate, as far as possible, the protean foliage of the order, but only a few of the thousand or more known species could be exhibited.

WILLIAM CARRUTHERS.



## DEPARTMENTS OF ANTIQUITIES.

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THE collections in these Departments are divided into two series. The first, consisting of Sculpture, including Inscriptions and Architectural remains, occupies the Ground Floor of the South-western and Western portions of the building; and to this division have lately been added some rooms in the basement, not originally designed for exhibition, but now supplying the only space which the extensive acquisitions recently made from Assyria and other countries have left available for that purpose. The second series, placed in a suite of rooms on the Upper Floor, comprehends all the smaller remains, of whatever nation or period, such as Vases and Terracottas, Bronzes, Coins, and Medals, and articles of personal or domestic use. To the latter division is attached the collection of Ethnographical specimens.

The arrangement of the series of Sculptures is still incomplete. So far, however, as that arrangement has been carried, the collections are so disposed as to admit of being visited, with few exceptions, in chronological order, from the earliest monuments of the Egyptian Pharaohs down to the latest memorials of the Roman dominion in this country. The peculiar form of the galleries has made it necessary to place the most ancient remains at the North-western extremity, which is farthest from the Entrance Hall; so that a visitor, wishing to pursue the more natural historical course, is recommended to descend the North-western staircase from the Gallery of Minerals and Fossils, on the Upper Floor, and enter the Ground Floor by the Egyptian Vestibule, proceeding through each apartment in the reverse order to that adopted in the ensuing description, which commences with the latest, or Roman monuments, and is continued through the Lycian, Greek, and Assyrian, to those of Egypt. The arrangement of the four principal series of sculptures may be stated generally as follows: the Roman

including the mixed class termed Græco-Roman, occupies the South side, running East and West: the Greek, strictly so called, the Assyrian, and the Egyptian, form, approximately, three parallel lines, running North and South, at right angles to the Roman. To the left of the Hall, on entering the building, is the

### ROMAN GALLERY.

On the South side, under the windows, are miscellaneous Roman antiquities discovered in this country, belonging to the Department of British Antiquities. On the opposite side is the series of Roman Iconographical or portrait Sculptures, whether statues or busts, forming part of the Department of Greek and Roman Antiquities. Each wall is divided by pilasters into six compartments.

### ANGLO-ROMAN ANTIQUITIES:

Immediately to the left of the door, on entering, are Pigs of lead, marked with Roman names, which specify either the mines from which the metal was obtained, or the Emperors, or local authorities, by whose license it was worked and sold.

Against the walls are mosaic or tessellated Pavements.

The oblong piece in Compartment I., decorated with a figure of Neptune, amidst fishes and marine monsters, was found in the ruins of a Roman villa at Withington, Gloucestershire. The large pieces in Compartment II., and the two smaller pieces, to the left hand, in Compartment III., originally formed part of the same pavement, though the space does not admit of placing them in juxtaposition.

The right-hand fragment in Compartment III. was discovered at Woodchester, in the same county.

In each of the first four Compartments stands a Sarcophagus, which, like most monuments of Roman sculpture found in this country, exhibits, more or less, the rudeness of provincial art. Within the Sarcophagus in Compartment IV. (which was discovered in London) was found a leaden coffin, the lid of which may now be seen above the Sarcophagus. Within the three other Sarcophagi, were discovered various remains, consisting chiefly of vases of glass or red earthenware, and in one instance a pair of richly-ornamented shoes, all of which are exhibited in glass cases in the British Room and Second Egyptian Room.

The large scroll in Compartment V. is probably an ornament from the cover of a Sarcophagus. It was found (with the fragment of a mill-stone, now placed on it, and two sepulchral Inscriptions, in Compartment VI.) at the foot of the old Roman wall of London. In the intervening spaces are placed Roman Altars.

Against four of the pilasters on this side stand Ogham Inscriptions,

of which three are from Ireland, and one from Fardell in Devonshire. Against another pilaster is a remarkable Altar, with a dedication in Greek to the Tyrian Hercules.

Against the Western wall is a large Basin, in the form of half an octagon, with bas-reliefs on the sides; as well as several smaller sculptures.

To the Roman period of the occupation of Britain belong the six specimens of mosaic or tessellated work attached to the upper wall on the North side of this Room. Those in Compartments VII—IX. were discovered in London; and those in Compartments X—XII., at Abbot's Ann, in Hampshire.

AUGUSTUS W. FRANKS.

## ROMAN ICONOGRAPHY.

Along the North side of the gallery is arranged the series of Roman portraits, in chronological order. Upon the pedestal of each statue, or bust, are inscribed, when known, the name of the person represented, the dates of such person's birth, death, and (if an Emperor) of his reign, and the site where the sculpture was discovered.

The greater part of the collection which here commences, and which is continued through the four succeeding, or Græco-Roman, rooms, was formed by Charles Towneley, Esq., and purchased, after his decease in 1805, for £20,000. Subsequent acquisitions have been made by the bequest of the collection of R. Payne Knight, Esq., in 1824, and by various individual purchases and donations.

In the centre of the gallery are the head of a barbarian chieftain, an equestrian statue, restored as the Emperor Caligula, but probably a work of the time of Caracalla, from the Farnese Palace, Rome, and the torso of an Emperor.

Compartment VII.—Head of Cnæus Cornelius Lentulus Marcellinus, Proprætor of Cyrene, about B.C. 70–56, and heads of Julius Cæsar, Augustus, the younger Drusus, Tiberius, and Caligula, or perhaps the young Augustus.

Against the pilaster, a statue of an unknown personage, wearing the *toga*; apparently dating not far from the Christian Era.

Compartment VIII.—Heads of Claudius, Nero, and Otho, bust of Empress, and busts of Domitia and Trajan.

Against the pilaster, an Iconic female figure, thought to be the Empress Livia, but perhaps a priestess. Found at Atrapalda, Lower Italy.

Compartment IX.—Busts of Hadrian · his favourite Antinoüs;



Julia Sabina, and a young man with a dedicatory inscription on the pedestal.

Against the pilaster, a statue of Hadrian, in armour.

Compartment X.—Bust of Antoninus Pius; head and two busts of Marcus Aurelius, the one attired as a *Frater Arvalis*; busts of Faustina and Lucius Verus when young.

Against the pilaster, a statue of Hadrian, found at Cyrene, in civil costume.

Compartment XI.—Busts of Lucius Verus and Lucilla; head of Commodus; and busts of Crispina, Pertinax, and Septimius Severus.

Against the pilaster, an unknown Iconic female figure, found at Cyrene; probably of the time of Hadrian.

Compartment XII.—Busts of Caracalla, Julia Mamæa, Gordianus I., Sabinia Tranquillina, Otacilia Severa (wife of the Emperor Philip the Elder), lower half of a statue of Lucius Verus, found at Ephesus, and head of Herennia Etruscilla.

On shelves above this row of busts is a series of heads and busts, mostly portraits, beginning at the west-end of the room with portraits of celebrated Greeks.

### FIRST GRÆCO-ROMAN ROOM.

This and the two succeeding rooms are, for the most part, appropriated to statues, busts, and bas-reliefs, of the mixed class termed Græco-Roman, consisting of works discovered (so far as is known) in Italy, but owing their origin and character, either directly or indirectly, to the Greek schools of sculpture. Some few of these may, perhaps, be original monuments of the autonomous or præ-Roman period of Greece, afterwards transported by the conquerors to their own country, but the majority were certainly executed in Italy during the Imperial times, though generally by Greek artists, and in many instances copied, or but slightly varied, from earlier Greek models.

Along the sides of the room, commencing from the North-west angle, are the following statues and heads:—

North Side.—A headless figure of Minerva, from Ephesus, and a head of Minerva. Against the western column are a Canephora and a small seated figure of Pluto or Hades, with whose attributes those of Jupiter are here combined. At the back of the same column is a bust of Minerva, with drapery and helmet restored in bronze, and at the back of the eastern column a statue of Hecate, or the Diana Triformis, with a Latin inscription recording the name of the person who dedicated it. Against the Eastern

column are a statue of Apollo, from the Farnese Palace, and a bust of Serapis. Against the wall is a statue of Ceres, with the attributes of Isis.

On the East side of the room an heroic figure, and a Satyr playing with the infant Bacchus, both from the Farnese Palace.

On the South side are a statue of Bacchus found at Cyrene, a head of Juno, a statue of Diana, a head of Diana, a statue of Apollo Citharædus from Cyrene, a head of Apollo, a statue of Venus, a terminal bust of Homer, a statue of a dancing Satyr, a head of a poet, and a statue of Diana.

On the West side of the room are a torso of a youth from the Farnese Palace, perhaps representing the god Somnus, a head of Jupiter, a head of Minerva, and a colossal bust of Jupiter.

Between this room and the Egyptian Gallery, is temporarily exhibited a large terracotta sarcophagus, found at Cervetri, and acquired with the Castellani Collection.

## SECOND GRÆCO-ROMAN ROOM.

In an alcove in this room is the Towneley Venus, found at Ostia; in the alcove on the opposite side is an athlete hurling a disc, presumed to be a copy of the celebrated Discobolus of Myron.

In the angles of this room are four heads; the Giustiniani Apollo, purchased at the Pourtalès sale; a female head, from the Towneley collection, formerly called Dione; an heroic head from the same collection, and a youthful head, probably of Bacchus.

## THIRD GRÆCO-ROMAN ROOM.

This room contains a variety of statues, busts, and reliefs, most of which represent divine or heroic personages. The description commences from the North-West door, leading to the Lycian Gallery.

On the North side the following may be noticed: Actæon, transformed by Diana into a stag; a group representing a sacrifice to Mithras, the Persian sun-god; a statue restored as Paris; a tablet in relief, representing the Apotheosis of Homer. In the upper part of the scene are Jupiter, Apollo, and the nine Muses on a hill in which is a cave: this relief is inscribed with the name of the sculptor, Archelaus of Priene. Then follow statues of the Muses Thalia and Erato and heads of Muses; the head of a wounded Amazon, on a bracket; an heroic head restored by Flaxman, and formerly in the collection of the late Mr. Samuel Rogers; the beautiful female bust commonly called Clytie, and which may represent some imperial personage of the Augustan age in the character of a goddess; a reclining figure of Endymion, and two statues of Cupid (Eros), one being a life-size figure bending his bow, and the other a small figure in the same attitude. A recumbent figure of Cupid with the attributes of Hercules.

Next to these succeed several sculptures of which Hercules is the subject; a small statue on a bracket; a relief, in which he is represented capturing the Keryneian stag; and on the Eastern wall three heads of Hercules. One of these, which is of colossal size, is very similar to the head of the celebrated Farnese Hercules at Naples.

On the South side of the room are a head of Venus; a relief with a dedicatory inscription, and representing three suppliants approaching Apollo, Diana, and Latona; Cupid, or Somnus, from Tarsus: a head of the youthful Hercules; a life-size statue of Libera, or Ariadne, with a panther; a girl playing with *astragali*. On a bracket above is a torso of Venus stooping to adjust her sandal; and above this again is a relief representing two Satyrs, from Cumae.

Next in order are, a youthful Bacchus; a group of Bacchus and Ambrosia, the latter being represented at the moment of transformation into a vine, from which a panther is snatching grapes. On each side of this group is a small statue of a Paniscus or young Pan; the support at the side of each of these figures is inscribed with the name of the sculptor, Marcus Cossutius Cerdo, a freedman. On the wall is a relief representing Ariadne(?), from Cumae.

Further on are part of a group of two boys quarrelling over the game of *astragali*; a statue of Venus; statues of two Satyrs; the head of a Satyr from a statue; the head of a Bacchante; a terminal Satyric figure playing on the flageolet, and two figures of the goat-legged Pan. At the Western extremity of the room are a torso of Venus and a statue of Mercury, formerly in the Farnese Palace at Rome.

The adjoining staircase leads to the

### GRÆCO-ROMAN BASEMENT ROOM,

To which the Basement of the Lycian Room has been recently annexed. In this room are arranged figures and reliefs of the Græco-Roman period, of inferior merit, miscellaneous objects in marble and other material, and the collection of tessellated pavements and mosaics which has been formed chiefly from the discoveries at Carthage in 1856-8, and at Halicarnassus in 1856. For an account of the former discoveries, see *Archæologia*, xxxviii., pp. 202-30. The tessellated pavements from Halicarnassus were taken from the rooms and passages of a Roman Villa. See Newton, *Hist. of Discoveries at Halicarnassus, &c.*, II., pt. i. pp. 281-303.

On the floor of the first room is placed the tessellated pavement of a room 40 ft. long and 12 ft. wide, in the Roman Villa at Halicarnassus.



At its upper end this mosaic represents a marine divinity, probably Amphitrite, accompanied by a Triton. To the South wall of this room is attached a wreath with an inscription from the same villa. Attached to the East wall is a mosaic representing on a colossal scale, the head of a Marine Deity, who has been identified as Glaucus, but may be Neptune (engraved, *Monumenti of the Roman Institute*, v. pl. 38). This mosaic was found at Carthage, and was presented to the Museum in 1844 by Mr. Hudson Gurney. Against the same wall are two marble groups representing Victory sacrificing a bull, and a marble relief, from the Pourtales Collection, representing two gladiators fighting with a bull. Along the sides of this room are placed sculptures in the round and in relief, marble candelabra, altars, vases, and other objects. Among the statues may be specially noted, the Nymph Cyrene struggling with a lion, found at Cyrene, and two small figures of fishermen, near which, on the party wall, is a mosaic from Carthage, representing a basket of fish. In the recess, in the middle of the party wall, are two curious reliefs from Amyclae, representing articles of toilet, dedicated, the one by a priestess, Claudia Ageta, the other by a lady named Anthusa. Against the wall of one of the entrances into the Annex is a relief representing the Nymph Cyrene crowned by Libya; with a metrical inscription.

The Annex formed by the Lycian Basement contains mosaics, sculptures in the round and in relief, and a number of miscellaneous objects. The mosaics arranged on the South side of the Annex are chiefly from the Roman Villa at Halicarnassus. Among them may be noticed two pieces representing Meleager and Atalanta, severally inscribed with their names, and a third piece with the figure of Dionysos, with his name inscribed, attended by a panther.

On the North side of the Annex is a piece of mosaic from Ephesus, representing a Triton of unusual form, accompanied by a dolphin with a trident in its mouth. On the same side, in bays near the windows, are arranged a number of mosaics from Carthage. Among them may be noticed three pieces from the angles of a pavement, each with a full length figure representing one of the Months. Two of them have, besides this figure, also a female bust, apparently each the personification of a Season, set in a circle in the corner. Among the other mosaics from Carthage are two scenes of hunting, one of fishing from a boat, and three slabs from a representation of a boar hunt.

Among the sculptures in the round in this Annex may be noticed a draped female figure, perhaps a Muse, found at Erythræ, with a base inscribed with the name of the sculptor, Apollodorus of Phocæa.

An altar dedicated to Silvanus by Callistus; an altar sculptured with figures of Muses, from Halicarnassus; another altar with a sepulchral relief, in which the figure of Mercury occurs in his character of Psychopompus, or conveyer of the departed spirits to Hades; a marble chair, with a wheel sculptured on either side; a marble patera with the figure of a Maenad in very low relief; a cistern of

green basalt perforated at the bottom; an oblong granite basin; several alabaster vases.

Returning to the head of the staircase, the door on the left leads to the

### LYCIAN ROOM.

*This Room being now in course of re-arrangement, is closed to the Public.*

Between the Lycian and Mausoleum Rooms is a small ANTE-ROOM, in which are on one side a seated figure of Demeter, two pigs dedicated to Persephone, and several heads and other sculptures, all of which were found in the *temenos* of the Infernal Deities at Cnidus. (See Newton, *Hist. of Discoveries, &c.*, II., Part 2, p. 375.)

In the opposite recess are an Iconic female figure, from the *temenos* of Demeter, Cnidus; a head of which the eyes formerly contained enamel; a torso, perhaps of the nymph Cyrene, found at Cyrene (See Smith and Porcher, *Discoveries, &c.*, pp. 91-8.) and a disk, with relief representing Apollo and Artemis destroying the family of Niobe on Mount Sipylus. From Rome.

### MAUSOLEUM ROOM.

In this room are arranged the remains of the Mausoleum at Halicarnassus, erected by Artemisia, about B.C. 352, over the remains of her husband, Mausolos, Prince of Caria, and discovered by Mr. Newton in 1857. It consisted of a lofty basement, on which stood an oblong Ionic edifice, surrounded by 36 Ionic columns, and surmounted by a pyramid of 24 steps. The whole structure, 140 feet in height, was crowned by a chariot group in white marble, in which, probably, stood Mausolos himself, represented after his translation to the world of demigods and heroes. The peristyle edifice which supported the pyramid was encircled by a frieze richly sculptured in high relief, and representing the battle of Greeks and Amazons. Remains have been found of three other friezes, one of which probably decorated the basement, and the other two the external walls of the *cella*. The monument was further adorned with many

statues and groups, some of which probably stood between the columns, and with a number of lions which we may suppose to have been placed all round the edifice as guardians of the tomb. The four sides of the tomb were severally decorated by four celebrated artists of the later Athenian school, Skopas, Leochares, Bryaxis, Timotheos. A fifth sculptor, Pythis, who seems to be the same as Pythios, the architect of the Mausoleum, made the chariot group on the *apex* of the pyramid. The material of the sculptures was Parian marble, and the whole structure was richly ornamented with colour. The tomb of Mausolos was of the class called by the Greeks *heröon*, and so greatly excelled all other sepulchral monuments in size, beauty of design, and richness of decoration, that it was reckoned one of the Seven Wonders of the ancient world, and the name Mausoleum came to be applied to all similar monuments.

The remains of the Mausoleum in this Room consist of—

#### I.—SCULPTURES IN THE ROUND.

No. 1. Two portions of the colossal horses from the chariot group on the apex of the pyramid.

No. 2. A statue, believed to be that of Mausolos himself, and to belong to the chariot group.

No. 3. A statue, believed to be from the same group, probably representing the goddess who acted as charioteer to Mausolos, or Artemisia herself when deified.

No. 4. Part of an equestrian group, representing a warrior in Persian costume.

No. 5. A seated male figure draped in a *chiton* and mantle.

No. 6. Torso of a male figure clad in a *chiton*.

No. 7. A colossal female head.

No. 8. Part of a head of Apollo.

No. 9. Part of a bearded head.

No. 10. A youthful male head, probably of a hero.

No. 11. A number of fragments of lions, standing in watchful attitudes, and probably placed round the tomb as its guardians. They vary in scale, but the height of the largest did not probably much exceed five feet.

To this list of sculptures in the round may be added fragments of many other statues, heads, and lions, too mutilated to require notice here.



## II.—SCULPTURES IN RELIEF.

No. 1. Frieze of the order representing a combat of Greeks and Amazons. Of this frieze the Museum possesses seventeen slabs, of which twelve, after having been removed from the castle of Budrum, in 1846, by permission of the Porte, were presented by Viscount Stratford de Redcliffe in the same year, four were discovered on the site of the Mausoleum in 1857, and the remaining one was purchased in 1865 from the Marchese Serra, at Genoa.

No. 2. Frieze representing a combat of Greeks and Centaurs. This probably encircled the basement.

No. 3. Frieze, on which is sculptured a chariot race, probably representing one of the contests held at the obsequies of Mausolos.

No. 4. Groups in high relief set in square sunk panels. These may have been inserted in the walls of the *cella*.

## III.—ARCHITECTURAL MARBLES.

No. 1. One of the steps which formed the pyramid.

No. 2. Portions of the cornice, richly decorated with projecting lions' heads as waterspouts, and floral ornaments.

No. 3. Portions of architrave.

No. 4. Ionic capital.

No. 5. Ionic capital from the angle of the peristyle, under which are two drums of a column.

No. 6. Base of Ionic column.

No. 7. Marble from the upper course of the lacunaria.

No. 8. A number of detached mouldings which were let into various parts of the architecture.

The frieze of the order and the fragments of the other friezes are provisionally placed against the West wall of the room, the lions against the opposite wall. The figures of Mausolos and the goddess, and the fragments of the colossal horses, are on the West side of the room, the equestrian group and the other torsoes and heads on the opposite side. In this room are also placed a head of Asklepios found at Melos, from the Blacas Collection; a head of Alexander the Great, from Alexandria; a cast from the metope of a Doric temple, found at Ilium Novum, 1872, and presented by the discoverer, Dr. Schliemann; subject, the sun god (Helios) in his chariot; an inscribed *stelè* from Rhodes presented by his Royal Highness the Prince of Wales; the following marbles discovered by Mr. Pullan in the Temple of Athene Polias at Priene: (1.) the dedication of the Temple of

Athene by Alexander the Great, inscribed on a stone from one of the *antae*; (2, 3.) a colossal arm and hand, probably from the statue of Athene in the Temple; (4.) a colossal foot; (5.) a colossal female head, closely resembling that from the Mausoleum, No. 7 *supra*; (6.) a male Ionic head, perhaps of a king of the Macedonian period; (7.) a draped female torso; (8.) an Ionic capital; (9.) a capital from one of the *antae*; (10.) fragments of the cornice.

These marbles, together with an interesting collection of inscriptions, fragments of frieze, and architectural fragments from the same site, were presented to the Museum by the Society of Dilettanti in 1870.

### ELGIN ROOM.

This room contains the sculptures from the Parthenon, a portion of the frieze of the temple of the Wingless Victory at Athens, some architectural remains from the Erechtheum, a statue of Dionysos from the Choragic monument of Thrasyllus, together with a number of fragments and casts, all from Athens. The sculptures from the Parthenon, and nearly all the marbles in this room, were obtained by the Earl of Elgin, when Ambassador at Constantinople, in the years 1801–3, by virtue of a firman from the Sublime Porte. The Elgin Collection, which includes some additional marbles acquired after 1803, was purchased from Lord Elgin by the Government in 1816, for £35,000.

The sculptures from the Parthenon consist of the remains of the pedimental compositions, the metopes and the frieze.

The Parthenon, or temple of the virgin goddess, Athene, was constructed by Iktinos about B.C. 440, under the administration of Perikles. It stood on the Acropolis of Athens, on the site formerly occupied by the more ancient temple of Athene, called Hecatompedon, which was burnt on the sacking of Athens by the Persians, B.C. 480. The Parthenon, like the earlier temple, was of the Doric order of architecture, and was of the form termed peripteral octastyle.

The sculptural decorations were executed under the superintendence of Pheidias.

The *cella* within the colonnade contained the colossal statue of Athene, executed in gold and ivory, one of the most celebrated works of Pheidias. Externally, the *cella* was ornamented by a frieze in very low relief. The two pediments were filled with figures sculptured in the round, and above the architrave the spaces between the triglyphs were decorated with groups sculptured in high relief. All these sculptured decorations were executed, like the architecture, in Pentelic marble. The relative position of these sculptures is shown in the model of the Parthenon representing the temple as it appeared A.D. 1687, immediately after the bombardment of Athens by the Venetian General, Morosini, when the explosion of a powder magazine shattered the middle part of the edifice. This model, executed by Mr. R. C. Lucas, sculptor, stands in the South-West angle of the room.

The group on the West side of this room belonged to the Eastern pediment of the temple, and represented, when perfect, the birth of Athene from the head of Zeus. The central figures, by which the action of the scene was expressed, have perished. Their place is here indicated by the opening in the middle of the group, which must be understood as representing a space of between thirty and forty feet. Of the figures which remain, the following are the designations most generally received, though subject to much difference of opinion:—

At the South end of the pediment, the upper part of the figure of Helios, or the Sun, rising from the sea, as at the approach of day; heads of two horses from the chariot of Helios; a male figure, reclining on a rock, covered with a lion's skin, popularly called Theseus, though there is no good ground for such an attribution; two goddesses, probably Demeter and Persephone, sitting on low seats; a female figure in rapid motion, supposed to be Iris, sent to announce on earth the intelligence of the birth of the goddess.

At the North end of the pediment, torso of Victory; group of one recumbent and two seated females, called the three Fates; head of a horse from the chariot either of Night, or of the Moon, descending beneath the horizon.

On the opposite side of the room are the remains of the Western pediment, in which was represented the contest of Athene with Poseidon for the soil of Attica. Though this group is now in a more fragmentary state than the other, it was more perfect in A.D. 1674, when drawings, still extant, were made of all the sculptures of the temple by Carrey, a French artist, and we are thus enabled to



supply many of the missing portions with greater certainty. Those statues which still remain at Athens are here represented by casts.

Beginning at the North end the figures are as follow :—

Recumbent statue, generally called the river-god Ilissos, but more probably the Kephissos; cast of a group, commonly known as Herakles and Hebe; male torso, supposed to represent Kekrops, the first king of Attica; upper part of a female head; fragment of the breast of Athene; upper part of the torso of Poseidon; draped female torso, supposed to be Amphitrite; lower part of a seated female figure, perhaps Leto; cast of the torso of a crouching male figure, by some considered as the river-god Kephissos, but more probably the Ilissos; part of a recumbent female figure, perhaps the nymph Kallirrhoe.

On a table in the South-East angle of the room are casts from some fragments of horses discovered in excavations on the Acropolis, and now preserved there. These fragments, doubtless, belong to the chariot group on the western pediment, which Morosini broke in trying to lower it, and which, as will be seen by reference to the model, stood immediately behind the figure of Athene, balancing the chariot of Poseidon in the opposite half of the pediment.

Attached to the Western wall of the room are fifteen of the metopes, and a cast from another, which is now in the Museum of the Louvre, at Paris. They are all from the South side of the Parthenon, and represent combats between Centaurs and Lapithae. Casts from three other metopes, still remaining at Athens, and representing various subjects, are inserted in the adjoining walls.

Around the room are placed in a continuous line the slabs removed by Lord Elgin from the frieze of the *cella*, with casts of a few other slabs still existing on the temple, forming altogether more than one-half of the entire series. They are arranged, as far as possible, in their original order, but it is necessary to bear in mind that, owing to the absence of a considerable portion, several slabs, not formerly connected, are here brought into juxtaposition, and that the effect of the whole frieze is in one sense reversed, by being made an internal, instead of an external, decoration. The subject of the bas-reliefs is the Pan-athenaic procession, which took place at the festival celebrated every four years at Athens in honour of Athene.

At the East end of the temple were originally placed the slabs (numbered, in red figures,) 17–24. On two of them (Nos. 18, 19) are deities, seated; and a priest receiving from a boy the *peplos*, or sacred robe of Athene. On each side approach trains of females, bearing religious offerings, and under the guidance of officers or magistrates.

On the North side of the building were Nos. 25–46, representing a long cavalcade of chariots and horsemen, and including amongst the latter the most beautifully executed examples of low relief which the ancients have left us.

No. 47, representing two youthful horsemen, is the only slab from the West end of the temple. It is succeeded by fourteen casts (Nos. 48–61), taken from the remainder of the frieze at this end.

The remaining reliefs (Nos. 62-90), which are from the South side, and in a very fragmentary condition, exhibit a procession moving in the opposite direction to that hitherto described, the two lines of figures having been so arranged as to meet at the East end. These reliefs represent horsemen, chariots, and victims led to sacrifice.

The room also contains casts of a few isolated slabs from the frieze, which are still at Athens.

Towards the South end of the room is the capital of one of the columns of the temple.

Besides the remains of the Parthenon, the following miscellaneous sculptures and casts are exhibited in this room:—

On the East wall, above the frieze of the Parthenon, are some sculptures from the Temple of Wingless Victory at Athens. This building, which appears to have been nearly contemporary with the Parthenon, was probably designed to commemorate some victories of the Athenians, both over the Persians and over rival Greek states. It was of Ionic architecture, and stood near the Propylæa of the Acropolis.

The series consists, firstly, of four marble slabs, and a cast from a fifth slab, belonging to the upper frieze of the building, representing in high relief Athenian warriors combating with enemies, some in Asiatic, others in Greek costume; and secondly, of casts from four slabs belonging to the lower frieze, representing five figures of Victory, two of them leading a bull to sacrifice. These reliefs are executed in the finest style.

On the same wall are some casts obtained by Lord Elgin from sculptures still decorating the Temple of Theseus at Athens, a building erected about twenty years earlier than the Parthenon, to commemorate the removal by Cimon of the bones of Theseus from Skyros to Athens.

These casts (numbered 136-149) are from the external frieze of the temple, and represent, in high relief, a battle fought in the presence of six seated divinities.

Nos. 150-154, towards the South end, represent a contest between Centaurs and Greeks.

Adjoining these are casts of three of the metopes (Nos. 155-157), exhibiting warlike achievements of Theseus.

On the same side of the room, resting on the floor, is a coffer from the ceiling of the same temple.

Under the frieze of the Parthenon, on the same wall, are casts of the reliefs which decorated the frieze of the Choragic Monument of Lysikrates, erected B.C. 334. They represent Dionysos transforming the Tyrrhenian pirates into dolphins.

Towards the North end of the room are some remains taken from the Erechtheum, a temple erected on the Acropolis of Athens, towards the close of the fifth century B.C. It is the purest and most characteristic monument of the Ionic order of architecture remaining in ancient Greece. Its form is oblong, with a hexastyle portico at the East end, and two unusual additions at its North-West and South-West angles; the one a tetrastyle portico, the other a porch supported by six Canephoræ, a structure which has been imitated as a decoration in St. Pancras Church, London.

The remains of this temple which are in the British Museum consist of one of the Canephoræ, and, by its side, the column which originally stood at the Northern angle of the Eastern portico; a considerable portion of the frieze from the wall immediately behind the same column; a large piece of the architrave, and a smaller fragment of the cornice, from other parts of the building, an ornamental coffer from the ceiling of the interior, and several minor fragments, mouldings, &c.

Opposite the Canephora is a colossal draped statue of Dionysos seated, which formerly surmounted the Choragic Monument of Thrasyllos, at Athens, erected B.C. 320.

Near these are placed some miscellaneous fragments of architecture from various buildings in Athens and Attica, including the capital of a Doric column, and a fragment of the architrave from the Propylæa, a building which stood at the entrance to the Athenian Acropolis.

Towards the North end of the room are a life-size statue of a youth, probably Eros, and a draped torso of Asklepios, found at Epidauros. Towards the South end of the room are casts of two marble chairs, from the theatre of Dionysos, at Athens. One of these chairs, which was placed in the centre of the front row in the theatre, was the seat assigned to the priest of Dionysos Eleuthereus, as appears from the inscription on it. It is richly decorated: on the sides of the two arms is a group in low relief, representing a winged youth, probably the Genius of the Games, setting two cocks to fight. Inside the back of the chair are two Satyrs, and on the front two Arimaspi fighting with Gryphons. The other chair was the official seat of one of the ten Athenian *Strategi* (Generals) in the theatre.

In the Room recently added to the North end of the Elgin Room, are a colossal lion, discovered at Cnidus in 1858



(see Newton, *Hist. of Discoveries* II., Part 2, p. 480), a sculptured drum of a column from the temple of Diana at Ephesus, a fragment of a similar drum, an Ionic capital and a base of a column with part of lowermost drum from the same building. The lion originally surmounted a Doric tomb which stood on a promontory a little to the east of Cnidus, and which originally consisted of a square basement surrounded by a Doric peristyle, with engaged columns, and surmounted by a pyramid, the *apex* of which was crowned by the lion. Inside the tomb was a beehive-shaped chamber with Egyptian vaulting, similar to that of the building known as the Treasury of Atreus, at Mycenæ, and with eleven smaller cells radiating from its circumference. This tomb was evidently a public monument of the class called *polyandrion*, and from its position on a promontory, must have been a conspicuous sea-mark. Hence it has been conjectured, with probability, that it was intended to commemorate the naval victory gained over the Lacedæmonians by the Athenian admiral, Conon, B.C. 394.

The door on the East side leads into the

## HELLENIC ROOM.

The marbles exhibited in this room have been brought, at different times, from various parts of Greece and its colonies. With them are also exhibited plaster casts of some important monuments of the period preceding that of the marbles. The description commences with the casts.

One of the earliest stages of development in the art of sculpture is represented by five casts, attached to the Western wall, which were taken from metopes of two of the ruined temples at Selinus, in Sicily. The subjects of the sculpture, which is in very high relief, are mythological.

Next in chronological order should be noticed the restorations, placed on each side of the room, of the Eastern and Western pediments of a Doric temple in the island of Ægina, erected probably about B.C. 500—478, and dedicated to Athene. The figures in these pediments are casts from the original marbles, which were discovered in 1811 amongst the ruins of the temple, and are now preserved in the Museum of Sculpture at Munich. The group in the Western

pediment, here placed on the North side of the room, represents the death of Achilles; the imperfect group in the pediment opposite is thought to represent an incident of the expedition of Herakles and Telamon against Troy.

The following marbles are exhibited in this room:—

First in importance is a collection of marbles discovered in 1812 amongst the ruins of the temple of Apollo Epicurius near the ancient Phigalia in Arcadia. This edifice was erected by Iktinos, the architect of the Parthenon at Athens, in commemoration of the delivery of the Phigalians from the plague, B.C. 430.

The most important part of this collection consists of twenty-three sculptured slabs, originally belonging to a frieze in the interior of the *cella* of the temple, and now arranged on both sides of the room. Eleven of them (Nos. 1-11) represent, in high relief, the contest between the Centaurs and Lapithae, which has been noticed in describing the metopes of the Parthenon. The other twelve represent the invasion of Greece by the Amazons.

Underneath the frieze are several architectural and sculptured fragments from the same temple, including part of a Doric capital from the outer colonnade, and part of an Ionic capital from one of the columns within the *cella*, the external and internal architecture of the building having been of different orders.

In the Southern half of the room is an Archaic draped female torso from a temple at Rhamnos, in Attica; an Archaic figure of Apollo, brought from the Levant by Percy Clinton, Viscount Strangford; and a statue of Apollo of a somewhat later period, formerly in the Choiseul Gouffier Collection.

In the Northern half of the Room are two statues representing a youth winding a diadem round his head. It is probable that the original from which both these figures were derived was the celebrated Diadumenos by Polykleitos, the contemporary of Pheidias.

On the East side is a mutilated figure of a Triton, in high relief, from Delos; a bust of Perikles; four terminal heads of Hermes and Dionysos; an ancient copy of an Archaic head of Apollo, and a bust of Hercules.

On the North side of the room, an oblong sculptured monument of uncertain use, with a relief representing apparently an offering to Juno. From Cape Sigeum, near Troy.

On one side of the Western door a bust of Æschines; on the opposite side, the bust of an unknown philosopher.

In this room are also provisionally placed four small Etruscan cists in freestone, found at Chiusi. They are ornamented with friezes in very low relief representing banquets, hunting scenes, and dancers, in an archaic style, bearing some resemblance to Assyrian sculptures.

C. T. NEWTON.

The East side of the Hellenic Room opens into the  
ASSYRIAN GALLERIES.

A suite of three long and narrow apartments, running North and South to a length exceeding 300 feet, with an additional room or transept, crossing from their Southern extremity, contains the collection of sculptures excavated, chiefly by Mr. Layard, in the years 1847–1850, on the site, or in the vicinity, of ancient Nineveh. To these has been added a further collection from the same region, excavated in 1853–55, by Mr. Hormuzd Rassam and Mr. W. K. Loftus, under the direction of Sir H. C. Rawlinson, K.C.B., at that time Her Majesty's Consul-General at Baghdad, and another excavated or obtained by Mr. G. Smith, in a mission to Mesopotamia, undertaken by the proprietors of the *Daily Telegraph*, and presented by them to the Museum.

This latter collection is arranged, partly in a small room adjoining one of the long galleries, and partly in the Assyrian Basement Room.

These discoveries were for the most part made in extensive mounds, formed by the natural accumulation of the soil over the *débris* of ruined edifices, in the three following localities:— 1. *Nimroud*, believed to be the ancient Calah of Scripture, on the banks of the Tigris, about twenty miles below the modern Mosul. 2. *Khorsabad*, a site about ten miles to the North-east of Mosul, which was excavated for the French Government by M. Botta, and from which was procured the greater part of the valuable collection now in the Louvre, though a few specimens of sculpture have also been obtained for the British Museum. 3. *Kouyunjik*, still indicated by local tradition as the site of Nineveh, nearly opposite Mosul, on the Tigris.

This classification of the localities, which correspond broadly with three successive periods in Assyrian history, forms the basis of the arrangement adopted for the sculptures.

(1.) The monuments from Nimroud, which may be approximately described as ranging from B.C. 880 to B.C. 630, occupy the Nimroud Central Saloon, in which the visitor, entering from the Greek Galleries, first finds himself; the long apartment immediately to the South, called the Nimroud Gal-



lery ; and the western compartment of the adjoining Assyrian Transept.

(2.) The sculptures from Khorsabad, executed under a monarch who is believed to have reigned about B.C. 721, are collected in the eastern compartment of the Assyrian Transept, a position not properly corresponding with their chronological sequence, but unavoidably adopted from the deficiency of space in apartments not originally constructed for this class of antiquities.

(3.) The monuments obtained by Mr. Layard from Kouyunjik, which may (with due allowance for the uncertainty of all Assyrian chronology) be placed between B.C. 721 and B.C. 625—the supposed era of the destruction of Nineveh—are arranged in the long room distinguished as the Kouyunjik Gallery. The additional collections excavated by Mr. Rassam and Mr. Loftus, principally at Kouyunjik, and placed in the Assyrian basement, may be regarded as supplementary to that contained in the last-mentioned gallery.

Besides the series of sculptures, the Assyrian collection includes a variety of smaller, but highly curious and instructive objects, discovered at Nimroud and Kouyunjik. These are now exhibited in Table Cases in the galleries.

In the Kouyunjik Gallery is also a Table Case containing various small articles from Babylonia and Susiana. These far-famed regions have as yet yielded to modern researches no large sculptured monuments, nor any artistic remains commensurate with the wealth and power of the Empires of which they were the seat. The principal Babylonian sites which have hitherto been more or less explored are—1. The scattered mounds of Warka, Tel-Sifr near Sinkara, Abu-Shahreïn, and Muqueyer, all dating from the most remote antiquity, and the last supposed to represent the Biblical “Ur of the Chaldees.” 2. The Birs-i-Nimrûd, commonly regarded as the remains of the Tower of Babel, but more probably the site of the ancient fortress of Borsippa, the earliest portion of which was erected by an ancient king of Babylonia, though it was entirely rebuilt by Nebuchadnezzar. 3. The mounds of Babylon itself, which contain no monuments earlier than the reign of Nebuchadnezzar.

In accordance with the system here pursued, under which the visitor to the Sculpture Galleries is conducted, as far as possible, continuously from the later monuments to the earlier, it is necessary, after quitting the Greek collection, to pass through the Nimroud Central Saloon, by its North door, to the

### KOUYUNJIK GALLERY.

The Collection of bas-reliefs in this room was procured by Mr. Layard, in 1849 and 1850, from the remains of a very extensive Assyrian edifice at Kouyunjik, which appears, from the inscriptions remaining on many of its sculptures, to have been the palace of Sennacherib, who is supposed to have commenced his reign about B.C. 700. It was subsequently occupied by his grandson Assurbanipal, who reigned towards the middle of the seventh century B.C. Monuments of both these kings are included in the collection. Those of Sennacherib are sculptured generally in gypsum or alabaster, those of Assurbanipal in a harder limestone. Most of the sculptures were split and shattered by the action of fire, the palace having apparently been burnt, probably at the destruction of Nineveh : indeed, many single slabs reached this country in 300 or 400 pieces. These have been simply rejoined, without attempt at restoration. To the left on entering is—

No. 1. A cast from a bas-relief cut in the rock, at the mouth of the Nahr-el-Kelb River, near Beyrout, in Syria, close to the immemorial highway between Egypt and Asia Minor. It represents Esarhaddon standing in the conventional attitude of worship, with sacred or symbolical emblems of deities above him, and is covered with a cuneiform inscription. In the rock, adjoining the original relief, are six similar Assyrian tablets, and three Egyptian bas-reliefs, with hieroglyphic inscriptions, bearing the name of Rameses II., who at an earlier period is supposed to have passed through Palestine.

The sculptures on the left, or West side of the Gallery, are all of the period of Sennacherib, and illustrate the wars he carried on, and the tributes he received. They are, for the most part, fragments of more extensive works. The most interesting subjects are as follows :—

No. 2. A galley, with a beak, propelled by two banks of rowers.

Nos. 4-8. A series of slabs, mutilated in the upper part, which commemorate apparently the expedition of Sennacherib into Southern Babylonia against Merodach Baladan, the same king, apparently, who is mentioned in Scripture as having sent letters and a present to Hezekiah, and to whose messengers the Jewish monarch exhibited all the treasures of his house. The campaign is represented in the bas-relief as occurring in a marshy district; a stream, probably that of the Tigris or Euphrates, is seen filled with islands overgrown with reeds, or jungle; in the water appear numerous fish and crabs; upon the islands many of the enemy have taken refuge, whilst the Assyrians pursue them in boats; and to the right (Nos. 6, 7, 8), on the banks of the stream, are collected the prisoners and spoil.

Nos. 15, 16, 17. A series, of which the upper portion is lost, representing the return from a battle.

Nos. 20-29. Part of a series, representing the siege of a fortified city by the Assyrians. The city is seen on Slab No. 25, planted on a high dome-shaped hill, whilst the assailants advance on each side to scale the walls with ladders. On Nos. 27-29 are represented the results of the contest, the triumph of the besiegers, and the collection of prisoners, apparently Jews, and spoil. The whole of this series is blackened by fire.

Nos. 34-43. Part of a series of sculptures which originally lined the two walls of a long narrow gallery, leading, by an inclined plane, from Kouyunjik towards the Tigris. On the one side, descending the slope, were fourteen horses, led by grooms; on the other, ascending into the palace, were servitors bearing food for a banquet. The figures are somewhat smaller than life, designed with much freedom and truth; and by comparison with the Panathenaic frieze in the Elgin Room, they may furnish a good point of view for estimating the capabilities and defects of Assyrian art. No. 39, on which is seen a marshal or chamberlain with a staff, was originally placed, as here, at a projection in the wall. Amongst the attendants or servitors, represented on Nos. 41-43, is one bearing in each hand a rod with two rows of dried locusts, which are to this day used as food by the Arabs. The other attendants carry wine-skins, birds, pomegranates, and other fruit.

No. 44. A semicircular-headed slab, with a small mutilated figure, standing before a table of offerings, near which are various symbols.

Next follow six slabs (No. 45-50), of a hard, fossiliferous limestone, and of which the surface is in high preservation. They were sculptured under Assurbanipal, and represent the victories of that monarch over the Elamites, or inhabitants of Susiana.

The first three slabs, Nos. 45-47, represent a battle between the forces of Assur-bani-pal and, Te-umman King of Elam, on the plain



between the river Eulæus and the city of Shushan. The successive scenes of the battle are depicted with great spirit; the rout of the Elamites; the overturning of the chariot of Te-umman, who falls to the ground wounded by an arrow; the attempt of Te-umman to escape by the aid of Parritu, his son; Parritu defending his father; he draws a bow, and Te-umman calls to him to shoot the arrow; the Assyrians cutting off the head of Te-umman; Assyrian warriors in a chariot, carrying the head of Te-umman to Assur-bani-pal.

The remaining three slabs, Nos. 48-50, exhibit, first, the reception at Arbela, by Assur-bani-pal, of two ambassadors from the King of Armenia; while the officers of the Assyrian king point out to the Armenian envoys the tortures inflicted on the Elamite prisoners. Second, a general of Assur-bani-pal conducts Ummanigas, nephew of Te-umman, to be installed as King of Elam; the Elamites come out to pay homage to the new king; in the distance is the city of Madaktu, presenting a curious general view of an Asiatic town.

The remaining bas-reliefs in this room all belong to the period of Sennacherib.

The next six (Nos. 51-56) formed originally part of a series illustrating the architectural works of that king, including, probably, the construction of the very edifice from which the slabs were obtained. On Nos. 51 and 52 is seen the conveyance of a colossal human-headed bull, lying sideways on a sledge, which is propelled, over wooden rollers, partly by ropes in front, partly by a lever behind. On one side is a lofty mound, which labourers are erecting with stones or earth, and which is perhaps designed for the platform of the future palace. The workmen are guarded by soldiers, and superintended by Sennacherib himself, in a chariot drawn by two men. A similar mound is represented on Slab No. 53, with an adjoining stone-quarry or clay-pit, where the materials of construction are prepared. On No. 54 is a portion of a group moving some weighty object; on No. 55 another colossal bull, represented as before; and on No. 56 the monarch, in his chariot, directing some operation sculptured on a lost portion of the series. The background of the slabs exhibits men carrying axes, saws, ropes, and other implements; and along the top are representations of the natural scenery of the country, water filled with fish, anglers floating on inflated skins, boats, banks lined with trees, and a jungle of reeds, in which are deer, and a wild sow with her young.

Nos. 57-59. Across the middle of these slabs a broad river is represented as passing. On its further bank, nearly insulated by a smaller stream, is a city, besieged by the army of Sennacherib, whilst on the right is seen a long procession of captives, with cattle and other spoil. On the nearer bank appears the king in a chariot, amidst officers and attendants, with a large collection of trophies and booty.

No. 60. A human figure, with a lion's head, of uncertain meaning.

In the centre of the room is an obelisk of white calcareous stone, discovered at Kouyunjik by Mr. Rassam, originally executed for Assur-nazir-pal, an Assyrian king who reigned about two centuries

before Sennacherib, and whose principal monuments are to be seen in the Nimroud collection. It is covered with small bas-reliefs, representing the various exploits of the monarch.

Towards the North end of the room is the upper part of an obelisk of Tiglath-Pileser II., also discovered by Mr. Rassam.

Towards the South end, a circular bowl in limestone, procured by Mr. Layard, and sculptured with bas-reliefs of men and lions.

Six Table Cases in the middle of the room contain small objects discovered in various excavations.

Cases A-B. Objects in iron and bronze—bracelets, fetters, and swords.

Case C. Terracotta tablets with cuneiform inscriptions: amongst them are the Assyrian canon of names of Eponymous officers, from B.C. 911 to B.C. 660; the record of the Egyptian campaigns of Assurbani-pal, B.C. 668, in which are mentioned Gyges, Necho, and Tirhaka; sale tablets with Phœnician inscriptions, and others dated from Nabonidus, B.C. 555, to the Seleucidæ, B.C. 164; a series of seals, two with the name of the Egyptian monarch Sabaco.

Case D. Bronze objects from Van, from the Palace of Argisti, King of Minni, contemporary of Sargon, about B.C. 720. Bronze figures of Gudea, King of Zergul, about B.C. 2000.

Case E. Terracotta tablets with cuneiform inscriptions: amongst them, an Assyrian planisphere; the phonetic names of the months; a cuneiform syllabary; tablet of Assyrian laws; hieroglyphic forms of cuneiform characters; a list of square roots; a tablet, giving an account of the descent of Ishtar, the Assyrian Venus to Hades, and the principal fragments of the three tablets giving the Chaldean account of the Deluge, Creation, and Tower of Babel.

Case F are seals, engraved stones, and cylinders of hard stone: amongst them are a cylinder of Dungi, King of Babylonia, about B.C. 2000; a fragment, with the name of Durigalzu, a king of Babylon, about B.C. 1400; and a stone, with the name of Nebuchadnezzar, B.C. 600; cylinder of Sennacherib, about B.C. 700; and one of Darius I., B.C. 520.

## NIMROUD CENTRAL SALOON.

With this room commences the series of sculptures excavated by Mr. Layard in 1847 and 1850, in different parts of the great mound at Nimroud; with which have been placed one or two sculptures since obtained by Mr. Rassam from the same locality.

To the left of the door, on entering from the Kouyunjik Gallery, is a small group of slabs in relief, consisting of sculptures discovered in the South-western edifice of the great

mound, which is believed to have been constructed by Essar-haddon, the son and successor of Sennacherib, towards the beginning of the seventh century B.C., with materials obtained, in a great measure, from the spoliation of the palaces erected in other parts of Nimroud by the earlier Assyrian dynasty.

The most important object in this group is a large bas-relief, divided horizontally into two tiers, the upper representing the evacuation of a city, and the lower an Assyrian monarch in his chariot. The inscription, of which a part exists on this slab, and the remainder was upon others adjoining it, recorded the receipt of tribute from Menahem, King of Israel, and thus indicates that this sculpture was executed for Tiglath-Pileser II., though subsequently transferred by Essar-haddon to his own palace.

Adjoining this is a colossal head of a human-headed bull, on a larger scale than any yet brought to Europe, and supposed to be of the time of Essar-haddon himself.

Against the two central pilasters stand two statues excavated by Mr. Rassam in the South-eastern edifice of Nimroud, each representing the god Nebo, and bearing an inscription to the effect that it was made by a sculptor of Nimroud at the order of Vul-nirari (a king who reigned about B.C. 780), and of his wife Sammuramat, who is supposed to be the original of the somewhat mythical Semiramis of the Greek and Roman writers.

On the opposite, or Western side of the room, are some bas-reliefs discovered by Mr. Layard in the ruins of the Central edifice at Nimroud, which are supposed to be intermediate in date between the ruins already referred to and those of the great edifice at the North-west quarter of the mound. The subjects are chiefly military.

To the left, or Southern side of the passage from the Hellenic Room, is seen the evacuation of a captured city, in which (as well as in the bas-relief immediately above) the various quadrupeds introduced are portrayed with great fidelity and spirit, the sculptor, as usual in Assyrian art, exhibiting greater power in the treatment of animal subjects than of the human form.

On the other side of the passage are three representations of sieges, in which the mounds thrown up by the besiegers, their battering-rams, and archers masked by loop-holed screens, evince their military skill, whilst the three impaled captives, on one of the slabs, give equal evidence of their cruelty.

Above these are two heads, known from the inscription on the left-hand slab to represent Tiglath-Pileser II. and an attendant.

In the centre of the room stands one of the most important historical monuments which have been recovered from Assyria, an obelisk in black marble, found near the centre of the great mound. It is



decorated with five tiers of bas-reliefs, each continued round the sides; and the unsculptured surface is covered with cuneiform inscriptions, which record the annals of Shalmaneser for thirty-one years, commencing about B.C. 860. The bas-reliefs illustrate the presentation of offerings to the king by his numerous tributaries, and the inscriptions record the names of the donors, amongst whom are Jehu "of the house of Omri," the Israelitish king, and Hazael, the contemporary king of Syria.

Against the columns are placed two tablets, with figures and inscriptions of Shalmaneser and Assur-izir-pal, found at Kurkh; on one Ahab is mentioned, also a bilingual inscription of Khammuragas.

The remainder of the Nimroud collection belongs altogether to the period of Assur-izir-pal, or Assur-nazir-pal, the earliest Assyrian monarch of whom any large monuments have been procured, and who is believed to have reigned about B.C. 880. The sculptures were found by Mr. Layard partly in the ruins of an extensive edifice at the North-west quarter of Nimroud, and partly in two small adjacent temples of the same date, one of which was dedicated to the Assyrian "God of War."

Beside the door into the Kouyunjik Gallery is a colossal lion, which, with a companion figure, decorated the sides of a doorway in one of the small temples just mentioned. It is covered with inscriptions, and, like all the figures found in similar situations, provided with five legs, so as to appear perfect both from the front and the side.

Near this stands a small statue, on its original pedestal, found in the same temple with the lion, and representing Assur-nazir-pal.

Of the remains of the North-west edifice the principal are two colossal figures, one a winged and human-headed lion, and the other a bull, not originally forming a pair, but taken from two different doorways. Though of smaller dimensions than usual, they are, both in delicacy of execution and excellence of preservation, amongst the finest specimens of Assyrian art.

Over the North door leading into the Kouyunjik Gallery is a lintel from the palace at Kouyunjik, representing a vase and two dragons.

The South door leads into the

## NIMROUD GALLERY.

This room contains a continuation of the series last described. The bas-reliefs on the West side were all found in one chamber of the North-west edifice. Those on the opposite side are partly from other chambers of the same edifice, partly from the small adjacent temple of the "God of War." The slabs with large figures bear inscriptions running horizontally

across the middle ; those with small figures have generally had inscriptions on the border above and below, though these have in many instances been cut off in ancient times. The double row of slabs occupying the greater part of the West side is arranged exactly as in the original building, excepting that a break occurs in one place, where some slabs have been lost.

The following are the most interesting subjects in this room, commencing on the left, or East side. The first eight slabs are from the North-west edifice :—

No. 19. Two persons, distinguished by their caps and pointed shoes as foreigners, bringing with them two monkeys, as tribute to some personage represented on a lost slab.

No. 20. The king, Assur-nazir-pal, in a richly-embroidered dress, and the cap distinctive of royalty, with a sword, of which the hilt is elegantly decorated with wrestling lions.

Nos. 21–26. Six slabs, representing the king among his attendants, supernatural and human, apparently returned from battle or the chase. The large dimensions, elaborate execution, and almost perfect preservation of this series, places it among the finest examples of Assyrian bas-relief. The figures are all sumptuously attired, their robes fringed and embroidered with sacred or mystical ornaments ; their sandals are painted in black and red, the bows of the eunuchs red, and the eyes of all of them black. It may be observed that the parts here indicated, together with the hair in some cases, and the necks, and edges of the mouths, of two men with lions' heads on two slabs hereafter mentioned, are the only objects on which colour is discernible in any of the Assyrian sculptures ; nor does the condition of the surface of those sculptures at all confirm the idea that the whole was originally covered with pigments.

The succeeding slabs (Nos. 27–30) are from the small temple of the “ God of War.” Nos. 27 and 28 stood originally, as here, at right angles to each other, No. 27 being on the external wall of the building, and Nos. 28, 29, on the side of a doorway leading to one of the chambers. On the opposite side of the doorway was a similar group, of which the slab on the external wall (No. 32) was alone removed by Mr. Layard.

Nos. 28, 29. A four-winged figure, with a three-forked thunderbolt in each hand, pursuing a monster or demon ; a composition which, from its repetition on each side the doorway, probably typified the extrusion of the Evil Spirit from the temple. Although shattered into fragments, and much decomposed by fire, these slabs still display considerable merit in design.

No. 29\*. A restoration of the slab which originally occupied the position corresponding to this, and the same in subject as the next.

No. 30. Slab from the opposite side of the doorway, forming the companion to No. 29\*. It presents a figure of the Fish-god, or Dagon.

The remaining bas-reliefs in this room are all from the North-west edifice.

No. 33 represents an eagle-headed figure, evidently a deity, supposed by some to be Nisroch, in whose temple Sennacherib was slain.

No. 36. A lion-hunt, which, though originally belonging to the North-west edifice, had been removed in ancient times, and was found in an isolated situation. It is here placed, for the purpose of comparison, opposite to some slabs of similar subject.

Nos. 37-40. A collection of bas-reliefs, representing what are believed to be religious rites. In each group two figures are seen, standing or kneeling before a species of tree, whose foliage is sculptured similarly to that known as the "honeysuckle ornament" of Greek architecture and vase-painting; one hand of each figure is raised, and generally holds some mystic offering or symbol, such as a fir-cone, a pomegranate-branch, a necklace, &c.

Upon the West side of the room is a similar subject (No. 2), on a bas relief within a boldly-projected border; two kings are here introduced in the conventional attitude of sacrifice or adoration, and each attended by a winged and triple-horned figure; above the mystic tree is the symbol of Divinity, sometimes described under the Persian name of Ferouher, being a small figure within a winged circle, holding a ring. The same symbol reappears, under a modified form, in some of the battle-scenes, where the Divinity seems to watch over the person of the king, and sometimes draws a bow at his enemies.

The double frieze, which next succeeds, may be regarded as illustrating the prowess of Assur-nazir-pal, both in the chase and in war.

First come the hunting-scenes—Nos. 3*a* and 3*b*, a bull-hunt, and the successful return; Nos. 4*a* and 4*b*, a lion-hunt, with similar sequel.

Afterwards the military scenes, among which may be distinguished—

Nos. 7*b*-9*b*. The passage of a river by the king and his army. The chariots are embarked in boats; the horses swim behind, guided by halters; many of the soldiers are likewise swimming, supported by skins inflated with air; others on shore are inflating skins previously to entering the stream.

Nos. 10*b*-12*b*. The capitulation of a city, and the king receiving the prisoners and spoil, a subject extending over a part of slab No. 13*b*. The original of No. 12*b* was so shattered, that Mr. Layard did not attempt to remove it, but made a careful drawing, from which has been executed the painting which here fills the vacant space. A portion of this slab subsequently obtained is opposite.

Nos. 11*a*-13*a*. The return from battle. To the left is seen the ground plan of a circular building, divided into four apartments, in each of which are figures preparing food; adjoining is a tent, with horses and grooms; beyond are soldiers at their games, and musicians; and to the right, the king in a triumphal procession.



Nos. 13*b*-15*b*. Siege of a city by Assur-nazir-pal, a subject presenting many curious details of military architecture and engineering, both aggressive and defensive; walls with serrated parapets, arched gateways with ornamental mouldings; the assailants at once mining, breaching, and scaling; a battering-ram plied from the interior of a moveable machine, surmounted by a tower, which is filled with archers and slingers; the besieged lowering grappling-irons from a bastion to catch the ram, and hurling firebrands to ignite the machine; the besiegers playing water on the flames; and each side discharging arrows and stones.

No. 16*a*. Upper part of a male figure, with the eyes and hair tinted black, exhibiting a greater amount of artificial colour than any other Assyrian sculpture yet discovered.

In the middle of the room are eight Table Cases, containing miscellaneous small objects found at Nimroud, chiefly in the ruins of the North-west edifice, and probably therefore of the age of Assur-nazir-pal, about B.C. 880.

Case H has several miscellaneous bronze objects, small bells, weapons, and articles of furniture, parts of thrones, chariots, and vases.

Case I contains some of the most interesting articles in the collection. The principal are a series of ivory-carvings from the North-west edifice, one having an Egyptian name within a hieroglyphical cartouche, and many others exhibiting Egyptian figures or decorations,—a conclusive proof of an intimate connection between Egypt and Assyria at a very early period; a large variety of ivory-carvings of more purely Assyrian character, one with Phœnician inscription, found in the South-east edifice.

Case K contains objects in bronze and iron, parts of thrones, two with Phœnician inscriptions, bowls containing bones of hands of enemies.

Case L has some more bowls, and a remarkable collection of bronze weights, in the form of recumbent lions, on some of which are engraved bilingual inscriptions, in the Phœnician, and cuneiform or Assyrian characters.

Case M contains several bronze bowls, with embossed and engraved ornaments of great beauty and curiosity, some of distinctly Egyptian style, such as winged gryphons, scarabæi, &c.

Case N has some miscellaneous antiquities obtained or excavated by Mr. G. Smith, in Assyria and Babylonia, and presented by the proprietors of the *Daily Telegraph*. Amongst them a stone tablet of Vulnirari I. recording the conquests of Assyrian kings and repairs, from Kalah Shergat, a brick of Shalmaneser I.; another of Assurbani-pal, and some contract tablets, dated in the reigns of the later Babylonian kings.

Case O contains fragments of terracotta tablets and miscellaneous articles from the same collection. Amongst them are figures of deities, and a cone with Cyprian inscription from Nimroud.

At the North-west angle of this Gallery is a door leading into the

### ASSYRIAN SIDE-ROOM.

In this room, and in the basement room with which it is connected by a staircase, are placed some of the sculptures and other objects procured by Mr. Rassam and Mr. Loftus, after the collection obtained by Mr. Layard had been already arranged. In addition to these are some objects from Babylonia. The wall cases contain miscellaneous objects of different periods discovered in Assyria and Babylonia.

The principal objects in this room are—

A four-sided and arch-headed *stèle*, of limestone, having in front a bas-relief of the king Samsivul, son of Shalmaneser. It was found by Mr. Rassam in the South-east edifice of Nimroud.

Two stones, with reliefs and inscriptions in the reign of Merodach-nadin-akhi, a king of Babylon at an early period, and another of Merodach Baladan I., B.C. 1300.

The Wall Cases at the sides of the room contain miscellaneous objects, the most remarkable of which are as follows :—

Cases Nos. 1-4. Assyrian bronze helmets.

Cases 5 & 6. Glass vases, and several Babylonian inscriptions on stone; one of the reign of Esar-haddon.

Cases Nos. 7-12. Various vases of alabaster and terracotta, one of alabaster holding sweetmeats, and a remarkable glass vase, impressed with the name of Sargina, or Sargon, B.C. 721; several prisms and cylinders of terracotta: one with the history of the first eight expeditions of Sennacherib, including an account of the invasion of Judæa, a series of bricks with royal names.

Cases Nos. 13-15. Objects in bronze and terracotta, amongst which are a shield, cauldron, and enamelled bricks.

Cases Nos. 16-19. Three earthenware coffins, covered with a blue vitreous glaze, and having small figures in low relief. They were found by Mr. Loftus at Warka, in a mound, formed almost entirely of similar remains, but are not, perhaps, older than the time of the Parthian Empire. Various glazed vessels and part of a bronze throne.

The staircase leads to the

### ASSYRIAN BASEMENT ROOM.

The sculptures arranged in this room, with one exception, belong to the time of Assurbanipal, the grandson of Sennacherib, having been discovered in the ruins of two palaces

at Kouyunjik, excavated, one by Mr. H. Rassam, the other by Mr. Loftus. Dating from the latest period of Assyrian art, they exhibit greater freedom of design, particularly in the animal forms, and greater delicacy of execution, than the bas-reliefs from Nimroud, or even the earlier monuments from Kouyunjik. Among the most remarkable are—

Nos. 1-8. Various operations of the camp, the bringing in of the heads of slain enemies, and registration of spoil and trophies.

Nos. 9-14. Soldiers and musicians, some of whom are captives

Nos. 17, 18. Assyrian deities.

Nos. 19, 20. Part of the Assyrian army and prisoners of war.

Nos. 21-32. The assault and capture of the city of Lachish by Sennacherib; his fortified camp and reception of prisoners.

Nos. 33-53. A lion-hunt by Assur-bani-pal, or Sardanapalus. A large area formed by spearmen prevents the escape of the animals. The lions are let loose from cages (No. 52), and are killed by the monarch by arrows, while horsemen attend and gallop round in different directions. One or two lions are seen in different groups attacking the king. The fury of the wounded and agony of the dying lions, as also the impatience of four dogs restrained by their keepers, are admirably delineated.

Nos. 54-62. The capture of a city in Susiana and reception of prisoners by the same monarch.

Nos. 63-74. The return from the chase in a series of slabs of the same size and style as Nos. 33-53. The hunters bear birds and dead lions, and lead the hunting dogs, and sumpter mules laden with nets.

Nos. 75-78. Scenes apparently of a *paradeisos* or park; a musician and lion; and a lion and lioness amidst trees and flowers; keepers and hunting dogs.

Nos. 79-82. Assyrian deities.

Nos. 83-90. Wars of Assur-bani-pal; the attack of an Arab race, who, mounted on one-humped camels, take to flight, while their tents are surprised and burnt; the siege of two cities and capture of one with its Æthiopian garrison of negroes, placed there by some Egyptian monarch.

Nos. 91-94. A hostile army flying past an Assyrian city or fortress, with an inner building with columns resting on the backs of lions and winged bulls, and a temple with columns and pilasters resembling those of the Ionic order; in front is a tablet with figure of the king and altar like that in the Assyrian transept, and a bridge or viaduct with openings like Gothic arches.

No. 95. Execution of the king of Susiana.

No. 96. Royal attendants bringing offerings.

Nos. 97-102*a*. Pavement slabs with representations of carpets.

Nos. 104-119. A series of slabs divided horizontally into two or three tiers of small figures, remarkable for the delicacy of their execution. They represent hunting scenes, the pursuit of deer, goats, wild



asses, and the different modes of killing the lion described in the accompanying inscriptions.

No. 120. Capture and burning of a city; guarding of captives, who are at meals.

No. 121. Fine slab representing Assur-bani-pal and his queen banqueting under a bower of vines. The king reposes on a couch, at the foot of which the queen is seated on a chair. A musician and attendants with viands and fans wait on the royal pair. Birds and grasshoppers are singing in the adjacent trees, to one of which is suspended the head of Teumman, king of Elam.

Nos. 122-124. Lion-hunting and other scenes.

In the centre of the room are three Table Cases containing several miscellaneous small articles of bronze, iron, and terracotta.

Returning up the staircase, and passing again through the Nimroud Gallery, the visitor reaches the

### ASSYRIAN TRANSEPT.

The first or Western Compartment, contains the remainder of the monuments of Assur-nazir-pal, of which the principal part has been described in the Nimroud Gallery.

In the middle is a high arched slab, having in front a bas-relief of the king, with various sacred symbols, and on the sides and back an invocation to the Assyrian gods, and a chronicle of the king's conquests. Before it stands an altar, which originally was so placed, at the entrance to the temple of the "God of War."

At the sides stand a pair of colossal human-headed lions, winged, and triple-horned, which originally flanked a doorway in the North-west edifice. With these terminates the series from Nimroud.

Behind these are two torsos with inscriptions, one of black stone, bearing the name of an ancient Chaldean king; the other of a goddess, found at Kouyunjik, with the name of Assur-bel-kala, an Assyrian monarch.

On the West wall are casts and sculptures in relief and inscriptions from the palace of the Persian monarchs, about 500 B.C. at Persepolis; and on the South wall casts of Pehlevi inscriptions at Hadji Abad in its vicinity.

Near there are cases containing antiquities excavated at Dali or Idalium, in Cyprus, by Mr. R. H. Lang, in 1870. Amongst them is an inscription in the Phœnician and Cyprian languages, dated in the reign of Melekiatun, about B.C. 370; and against the columns on the North side the upper half of the statue of a deity or monarch, and another statue from the same place.

On the East side of this Transept, is the Khorsabad Compartment, containing monuments from the palace of Sargina, the founder of the later Assyrian dynasty, about B.C. 721.

Two colossal human-headed bulls, corresponding exactly in dimensions and style with the pair now in the Louvre at Paris, are placed as at the entrance of a chamber, and beside these, two colossal figures of mythological character. This entire group was obtained from Khorsabad by Sir H. C. Rawlinson, K.C.B., in 1849.

Within the recess thus formed are several bas-reliefs procured from the same place in 1847 by Mr. Hector, a merchant residing at Baghdad. They are chiefly fragmentary figures from a more extensive series, some on a large scale, and retaining remains of colour. The horses' heads, facing the window, are richly and carefully finished.

Below these is the only slab obtained by Mr. Layard from Khorsabad; it is in black marble.

At the other end are slabs with inscriptions from colossal bulls, recording the campaign of Sennacherib against Judæa. They come from Kouyunjik.

In the centre is placed a monument, not belonging to the Khorsabad series, a seated figure of Shalmaneser in black basalt, found by Mr. Layard about fifty miles below Nimroud on the Tigris, in the great mound of Kalah Shergat, which is supposed to be the site of Ashur, the primitive capital of Assyria.

A marble Phœnician sarcophagus from Sidon is in the centre, and on the North side are some busts and statues from Dali or Idalium.

The North side of the Assyrian Transept opens into the

## EGYPTIAN GALLERIES.

The monuments in this collection constitute on the whole the most widely extended series in the range of Antiquity, ascending to at least 2000 years before the Christian æra, and closing with the Mohammadan invasion of Egypt, A.D. 640.

The larger sculptures are placed in two great Galleries with a connecting or Central Saloon, and in a Vestibule at the Northern extremity. They have been arranged, as far as possible, in chronological order, according to the succession of dynasties recorded in Manetho.

The smaller sculptures, consisting chiefly of sepulchral tablets, have been brought, as far as practicable, into the same order as the larger monuments. These tablets record the names and titles of the deceased, who are represented upon them performing acts of homage to their ancestors or various divinities. Though of great value to the student of the language and history of Egypt, they do not possess such interest as to detain

the general visitor. Their probable age, and the names of the persons to whom they were erected, will be seen on their labels.

The Egyptian collection has been formed partly from the donation, by King George III., of the antiquities obtained at the capitulation of Alexandria; and partly by acquisitions from the Earl of Belmore, Mr. Salt (including the discoveries of Belzoni), and M. Anastasi. It has been further enriched by presents from H.M. the Queen, H.R.H. the Prince of Wales, General Howard Vyse, the Duke of Northumberland, the Marquis of Northampton, and others.

The localities from which the sculptures have been principally derived are as follows:—The earlier sepulchral monuments are chiefly from Memphis, the capital of the most important of the more ancient dynasties, and the ruins of which are on the left bank of the Nile, opposite Cairo. Other early remains are derived from the great burial-place of Abydos. The main portion of the collection, including most of the monuments belonging to the kings of the 18th, 19th, and 20th dynasties, was obtained from the ancient city of Thebes, which became the capital of Egypt under those monarchs. This city was built on both banks of the Nile, and included the four modern localities, Karnak and Luxor on the right bank, Gourneh and Medinet-Haboo on the left. The antiquities from Alexandria and Cairo are of more uncertain origin, as some of them had been only transferred to those cities in comparatively recent times.

Most of these monuments, of whatever period, are inscribed with hieroglyphics, a form of writing almost peculiar to the Egyptians. These characters are all representations of visible objects, and are generally executed with great care and finish. They are employed in various ways, sometimes *symbolically*, to indicate the object represented, or the quality for which an object is remarkable: at other times *alphabetically*, to express the sound of the initial letter of the Egyptian name.

## SOUTHERN GALLERY.

The visitor on entering this Gallery approaches the most recent of the antiquities of Egypt, the first recess on each side being occupied



by monuments of the Roman dominion in that country, a period which commenced with the capture of Alexandria by Augustus, B.C. 30, and extended to the Mohammadan invasion, A.D. 640.

In the second compartment are placed the remains of the Ptolemaic or Greek period, introduced by the conquests of Alexander the Great, and the accession of Ptolemy Soter to the throne of Egypt in B.C. 323. In the centre of the room is placed the celebrated Rosetta stone; it is a tablet of black basalt, having three inscriptions, two of them in the Egyptian language, but in two different characters (Hieroglyphic and Enchorial), the third in Greek. The inscriptions are to the same purport in each, being a decree of the priesthood at Memphis in honour of Ptolemy Epiphanes about the year B.C. 196. This stone has furnished the key to the interpretation of the Egyptian characters. Cast of a similar trilingual tablet found at San, being a decree of the priests at Canopus in honour of Ptolemy Euergetes I. and Berenice, B.C. 238.

The next two compartments contain the monuments of the 30th, or last native dynasty, which succeeded in expelling the Persians from Egypt. The principal sculptures are:—A slab of green basalt, on which is represented King Nectanebo II. (B.C. 358–340), making offerings to a deity; from *Alexandria*.—The sarcophagus of King Nectanebo I. (B.C. 378–360), formerly described as that of Alexander the Great, on the exterior of which are representations of the sun passing through the heavens in his boat, and on the interior various divinities; *Alexandria*.—Sarcophagus of Naskatu, a Memphite priest, covered with inscriptions; *Memphis*.—Two obelisks erected by King Nectanebo I. before the Temple of Thoth; *Cairo*.

The two following compartments contain the remains of the 26th dynasty, which commenced under Psammetichus I., and was conspicuous for its encouragement of art, and for the extensive employment of Greeks in its service. It terminated at the conquest of Egypt by the Persians under Cambyses, B.C. 525. The principal objects are:—The granite sarcophagus of Hapimen, a royal scribe; *Cairo*.—The elaborately-worked sarcophagus of the Queen of Amasis II. (B.C. 538–527); *Thebes*.—A slab of basalt, on which is represented Psammetichus I., making offerings; *Alexandria*.—A basalt kneeling figure of a public functionary, named Uah-pa-het; *Natron Lakes*.

In the next recess are monuments of the 22nd dynasty, which is supposed to have been of foreign extraction. Among its monarchs was Sheshonk I., the Shishak of Scripture, who plundered Jerusalem. The name of this king occurs on two figures of the goddess Sekhet, or Pasht (Bubastis), from *Karnak*.—Near these is a statue of the god Hapi, or the Nile, dedicated by Sheshonk, high priest of Amenra, and son of Osorkon I.

The other objects in this compartment are of uncertain date; in the centre is a large scarabæus, the symbol of Cheper (the Creator), which had been removed to Constantinople under the Byzantine Emperors.

The remainder of this Gallery, and the whole of the Central Saloon, are filled with the monuments of the 19th dynasty, a race of kings of

great power, during whose dominion the Egyptians conquered Phœnicia, and by whom extensive edifices were erected at Thebes.

In the last compartment is a finely sculptured group in sandstone, of a male and female figure seated; and a statue of King Seti Menephtah II. on a throne, with a ram's head on his knees, from *Karnak*, and the statue of the Prince Shaaemuas, son of Ramesses II.; *Siout*.

At the South end of the Room is a Table Case containing some miscellaneous antiquities excavated by the late Mr. G. Smith, in 1874, amongst them are a stone model of a winged human-headed cow, several tablets, a bronze spoon, iron and other objects.

### CENTRAL SALOON.

The principal part of the monuments in this room are of the age of King Ramesses II., the Sesostris of the Greeks, and the greatest monarch of the 19th dynasty. Between the columns on the left is a colossal fist in red granite, from one of the statues which stood before the great Temple of Phtah at *Memphis*. On the left are three colossal heads, the first a cast from a statue of Ramesses at Mitraheny, the other a granite head and shoulders from the building called the Memnonium, at *Thebes*, and that of a queen.—The remaining sculptures represent chiefly the king and his officers.—Between the columns, at the entrance to the Northern Gallery, are, on one side, a granite statue of Ramesses II., erected by King Menephtah, from *Karnak*; and on the other, a wooden statue of King Sethos I.

### NORTHERN GALLERY.

The larger sculptures in the Northern Gallery belong to the 18th dynasty, during whose rule Egypt was in a state of great prosperity. It commenced with the expulsion of the Hyksos, or Shepherd Kings, from Lower Egypt, and its monarchs extended their conquests into Æthiopia and Asia, and built great edifices at Thebes. The close of this dynasty was troubled by disturbances, caused by a heresy in the Egyptian religion, called that of the Disk-worshippers, which has left its traces on several monuments in the collection. The principal sculptures, proceeding Northwards, are as follows:—Two statues in black granite of King Horus, one representing him under the protection of the god Amen-ra.—Two red granite lions, one having upon it the name of King Amenophis III., the other that of one of his successors, as well as the name of an Æthiopian monarch; from *Mount Barkal* in Nubia.—The head of a colossal ram, from an avenue of ram-headed sphinxes, which led to a gateway built by King Horus at *Karnak*.—Two seated statues in black granite of King Amenophis III.; *Thebes*.—

A sandstone tablet recording the passage of Amenophis III. into Æthiopia, the extent of his conquests, and the number of the prisoners and slain; *Senneh*.—A column, with a capital in the form of lotus buds, inscribed with the names of Amenophis III. and two later kings; *Cairo*.—Two colossal heads, representing Amenophis III., found near the statue called the "Vocal Memnon," at *Thebes*.—Several statues of the cat-headed goddess Sekhet (Bubastis), inscribed with the name of the same monarch; *Karnak*.—A black granite sculpture representing a boat, in which is seated Queen Mautemua, wife of Thothmes IV., and mother of Amenophis III.—In the centre of the Gallery is a colossal head of King Thothmes III., discovered by Belzoni near the granite sanctuary at *Karnak*: near the head is the arm of the same figure.—A monument sculptured on four sides; upon it is represented in bas-relief King Thothmes III., supported by the god Muntra and the goddess Athor; *Karnak*.—Small limestone statue of the prince Anebni, dedicated by Thothmes III.—In the central recess of the East side of the Gallery is fixed the tablet of Abydos, an inscription of great value in determining the names and succession of the kings of various dynasties. It appears originally to have commemorated an offering made by Rameses II. to his predecessors on the throne of Egypt; and was discovered by Mr. W. Banks, in a chamber of the temple of Abydos, in 1818. In the same part of the Gallery are placed some fine specimens of Egyptian painting, representing Osiris, Amenophis I., the queen Nefertari, the tributes of Asiatics and negroes, jewellers at work, banqueting scenes, fowling, and other subjects of ordinary Egyptian life.

## NORTHERN VESTIBULE.

In this apartment are placed monuments of the first twelve dynasties of Egyptian monarchs. Though small in size, they have considerable interest, being the most ancient sculptures preserved in the Museum; and they show that art had made great progress in the early times to which they belong. The sculptures are principally of the 4th and 12th dynasties.

The 4th was distinguished by the high civilization that prevailed in Egypt during its rule. Its monarchs conquered Arabia, and built the pyramids as royal sepulchres. Among the monuments may be noticed some of the casing-stones of the pyramids, a small statue of a naval constructor, and a coloured statue found in a tomb at *Gizeh*.

The 12th dynasty excavated the Mœris Lake, built the Labyrinth, the city of Abydos, and the fortress of Semneh, and conquered Nubia or Æthiopia. Of this dynasty is a mutilated statue of King An, dedicated by King Usertesen I.

Over the East doorway is a plaster cast from the head of the most Northern colossal statue of Rameses II. at Ibsamboul, placed here owing to the want of space in the Central Saloon.



## NORTH-WEST STAIRCASE.

On the staircase are placed Egyptian Papyri, which are documents of various character, inscribed on rolls formed of slices of the papyrus plant. They show the three forms of writing in use among the Egyptians :—1. The *Hieroglyphic*, in which all the characters, or figures, are separately and distinctly defined. 2. The *Hieratic*, in which the same characters are represented in what may be termed a running hand. 3. The *Demotic*, or *Enchorial*, a still more cursive form, in which the language of the common people was written ; it was principally employed in civil transactions during the Ptolemaic period, and continued in use to the 3rd or 4th century of our æra.

The papyri exhibited present chiefly portions and extracts from the Ritual of the Dead, the small pictures in them referring to the subjects of the various chapters ; others are solar litanies and magical tracts. Amongst them is a caricature, and a treatise on arithmetic and geometry, one on medicine, with recipes of the age of Cheops, the romantic tale of a doomed prince, songs, dirges, criminal reports, and several contracts or deeds of sale and a marriage contract in the demotic character.

At the top of the staircase is the

## EGYPTIAN ANTEROOM.

On the walls are placed casts from sculptured and coloured bas-reliefs in Egypt, painted in imitation of the originals. The principal are as follows :—

Bas-relief from the North wall of the great edifice at Karnak, representing the victories of King Seti I. over the Tahennu, a people who dwelt to the North-west of Egypt.—Bas-reliefs taken from the tombs of Seti I., Seti II., and other kings of the 19th dynasty, in the Biban-el-Molook, or valley of the tombs of the kings, at Thebes.—Bas-reliefs from several portions of a fallen obelisk of red granite at Karnak, and some large Egyptian wooden coffins.

To the right, or South side, is the

## FIRST EGYPTIAN ROOM.

In this, and in part of the next room, are placed the smaller antiquities of Egypt. Most of these have been discovered in tombs, and owe their remarkable preservation to the

peculiar dryness of the climate of the country. They have been acquired mainly by purchases from the collections of M. Anastasi, Mr. Salt, Mr. Sams, and Mr. Lane, and by donations from H.R.H. the Prince of Wales, the Duke of Northumberland, Sir Gardner Wilkinson, and other travellers in Egypt. The objects may be divided into three principal sections :—

1. Those relating to the religion of the Egyptians, such as representations of divinities and sacred animals.
2. Those relating to their civil and domestic life.
3. Those relating to their death and burial.

#### I. RELIGIOUS SECTION.

The Egyptian Pantheon, which was very complex, comprehended a large number of divinities, of which the most important were connected with the sun in his annual or diurnal course, and the lesser were his attendant satellites. The relative importance of the divinities depended in some measure on the power and wealth of the cities in which they were principally worshipped, each city having a distinct group, formed of the local god, his wife, and child, with occasionally a fourth divinity added. In the representations of the deities, their heads are generally exchanged for those of the animals sacred to them.

The figures in Cases 1–11 are arranged simply as illustrations of mythology, and without reference to their original purpose. Those which are of wood and stone were found generally in tombs and temples ; those of bronze and silver were principally votive ; whilst the small figures in gold, porcelain, and other materials, were worn as amulets, employed in private worship, or attached to the mummies of the dead. The upper row in the Cases contains the larger figures, the next those in bronze, the third those in porcelain, and in the lowest are the larger figures in various materials. Among them may be noticed the following :—

Cases 1, 2. Amenra (*Jupiter*), the principal deity of Thebes ; Ra (*The Sun*), the god worshipped at Heliopolis, or On ; Phtah (*Vulcan*), the divinity of Memphis ; the goddess Sekhet or Bast (*Bubastis*) ; and Neith (*Minerva*), the goddess of Sais, whence her worship is supposed to have been carried to Athens. Cases 3–5. Thoth (*Mercury*), the god

of knowledge, and the reputed inventor of writing; the goddess Sothis, or the Dog Star; Osiris, the judge of the dead, his wife Isis, and their son Horus, three divinities who were worshipped throughout Egypt. Case 7. Anubis, the god of Embalming, and Bes, or Typhon, the impersonation of the principle of Evil.

Cases 8-11. Representations of animals sacred to the various divinities, and which were also themselves worshipped, though the reverence paid to some of them varied considerably in different parts of the country. In Cases 8, 9, are quadrupeds, such as the Bull Apis, the jackal of Anubis, the cat of Sekhet or Bast, the cynocephalus, the lion, the goat, &c. In Cases 10, 11, birds, fishes, and reptiles, such as the hawk of Horus, the ibis of Thoth, fishes of various kinds, the crocodiles of Sebak, and the cobra di capello snake, or uræus. There are also sacred emblems, such as those of Life, Stability, &c.

## II. CIVIL SECTION.

The remains of Egyptian dress, personal ornaments, and articles of domestic use, show the high civilization and even luxury to which the people had attained.

In Cases 12, 13, are figures of kings and public functionaries, in bronze, ivory, or wood, principally found in tombs. The most remarkable are some finely carved figures of females, and a fine statuette in bronze, inlaid with silver, representing a king.

Cases 14-19 contain household furniture, consisting of wooden head-rests, which served as pillows; chairs with plaited cord bottoms; stools, and folding seats; some of them formed of ebony inlaid with ivory. With these is a model of a peasant's house, with granaries, in the court of which is seen a woman making bread; the wig of an Egyptian lady of rank, and the box for holding it; a three-legged table, and other objects of a similar nature.

Cases 20, 21. Articles of dress and appliances for the toilet. Shelf 1. A leather dress, a linen shirt, and a box to hold clothes. Shelf 2. Combs, hair-pins, ointment-vases, and apparatus for painting the eyes with *Stibium*. Shelves 3, 4. Bronze mirrors, and a collection of shoes and sandals.

Cases 22-32. Vases of various kinds. In Cases 22, 23. Vases made of oriental alabaster (arragonite), some of them inscribed with the names of very early kings, such as Unas of the 5th dynasty, and Nephhercheres. There is also a vase, on which is engraved an inscription stating its capacity. Cases 24, 25. Shelf 1. Vessels in alabaster and serpentine. Shelves 2 and 3. Glazed steatite, and porcelain vases: some fragments with the names of kings. Shelf 4. Earthenware of various kinds. Cases 26-29. Earthenware vases, some of them with polychrome painting. Cases 30-32. Vases in red terracotta; one of them in the form of a woman playing on a guitar.

Cases 33-35. On the two upper shelves, bronze vases of various



kinds, the most remarkable being buckets, covered with hieroglyphics, probably for offering water in the temples; and the model of a stand with a set of bronze vases upon it: also two fragments of bronze inscribed with the name of Tirhakah, king of Egypt. Shelf 3. Articles of food, such as fruit and grain. On a stand are two trussed ducks and some bread. Shelf 4. Agricultural implements, such as a hoe and sickle, of iron, and the wooden steps of a ladder.

Cases 36, 37. Armour and weapons for war, and implements for the chase. Among them are several highly ornamented bronze axes; with daggers, one with flint blade, spear-heads, and arrows tipped with flint, and a pulley.

Case 39. Artistic and writing implements, such as the palette for holding colour, and ink-pots, and moulds for making terracotta ornaments.

Cases 40-45. Various objects of domestic use. Cases 40, 41. Shelves 2 and 3. Boxes, and spoons; some of the former made of ebony and ivory, and the latter much carved and ornamented. In Cases 42, 43, on Shelves 1 and 4, are baskets. Shelf 2. Tools chiefly made of bronze, and models of similar instruments, several of them inscribed with the name of Thothmes III., a king of the 18th dynasty. Shelf 3. Carvings in bone, ivory, and wood. Cases 44, 45. On Shelf 1, baskets made of palm-leaves. Shelf 2. Musical instruments, including harps, flutes, cymbals, and *sistra*; games and playthings, such as draughtsmen, dice, dolls, and balls. Shelves 3, 4. Linen cloths of various colours.

### III. SEPULCHRAL SECTION.

The preparations for embalming the dead, and ceremonies at funerals, were looked upon as matters of great importance by the Egyptians, and large sums of money were spent upon the sepulchral rites. There were several modes of preparing the mummies, varying not only at different periods, but also with the rank and wealth of the person to be interred. The more costly process was as follows:—The brain having been extracted, and the viscera removed through an opening cut in the left side with a stone, the body was, in earlier times, prepared with salt and wax, in later times, steeped or boiled in bitumen; then wrapped round with bands of linen, sometimes 700 yards in length; various amulets being placed in different parts, and the whole covered with a linen shroud and sometimes decorated with a network of porcelain bugles. It was then enclosed in a thin case formed of canvas, thickened with a coating of stucco, on which were painted figures of divinities and emblems of various kinds, as well as the name

and titles of the deceased, and portions of the Ritual of the Dead. The whole was then enclosed in a wooden coffin, and sometimes deposited in a stone sarcophagus.

Cases 46-51. Various mummies and coffins; the most remarkable being part of the mummy-shaped coffin of King Menkara, the Mycerinus of the Greeks, builder of the Third Pyramid. This is not only the oldest coffin in the collection, but one of the earliest inscribed monuments of Egypt. Near it is part of a body, supposed to be that of the king, found in the same pyramid. A small Græco-Egyptian mummy of a child from Thebes; on the external wrapper is painted a representation of the deceased.

The principal mummies and their coffins are placed in two rows in the central part of the room. The most important are the following:—

Case 66. Mummy and coffin of Bakrans (Bocchoris), a female: about B.C. 720.

Case 67. Mummy and coffin of Katbti, a priestess of Amen-ra.

Case 68. Coffin of Har, incense-bearer of the temple of Num-ra.

Case 69. Very fine mummy of Harnetatf, high priest of Amoun; on the soles of the sandals are represented Asiatic captives. The outer case is in the corner of the room, in Case 27.

Case 70. Mummy of Haremhbai, richly painted, and the coffin of Enantef, a king anterior to the 12th dynasty.

Case 72. Coffin of Tenamen, an incense-bearer at Thebes. The face is of dark wood, inlaid with glass.

Case 74. Mummy of a Græco-Egyptian youth, whose portrait is placed on the head, painted on cedar.

Case 75. Mummy and coffin of a Græco-Egyptian girl, named Tphous, daughter of Heraclius Soter; on the coffin is a Greek inscription, recording her death in the 11th year of Hadrian, A.D. 127.

Case 103. Sarcophagus of Mentuhetp, a functionary of about the 11th dynasty.

Case 104. Sarcophagus of Amam, an officer under one of the older dynasties.

Cases (A) 77, (B) 90, and (C) 105, in the centre of the room. Two large wooden coffins of the Roman period. One is that of Cleopatra, of the family of Soter, the other of Soter himself, an archon of Thebes, in the reign of Trajan; and the outer, inner case, and mummy of a female named Shepshet, about B.C. 700.

In the upper part of the Cases just mentioned are placed personal ornaments, amulets, and scarabæi, chiefly found with the mummies. The scarabæi frequently bear the names of kings, showing probably that the persons interred had borne office under those monarchs. The most remarkable are some small scarabæi in Division 95, with the names of Cheops and Chephren, the kings who built the Great and the Second pyramids, and several large scarabæi of the reign of Amenophis III.; one (No. 4095) recording the number of lions slain by the king within

a certain period; the other (No. 4096) relating to his marriage with Queen Taia, and the extent of his dominions.

Returning to the Wall Cases, we find mummies of sacred animals as follows:—Cases 52, 53. Mummies of cynocephali, jackals, and cats. Cases 54, 55. Mummies of sacred bulls and of rams, the heads and principal bones only embalmed. Cases 56, 57. Mummies of the Ibis, sacred to Thoth; and specimens of the conical, covered pots in which they were deposited. Case 58. Mummies of crocodiles, emblems of Sebak, and of snakes, emblems of Isis. Case 60. Mummies of snakes and fish.

In Cases 61, 62, are specimens of unburnt bricks, some stamped with the names of kings of the 18th and 19th dynasties.

Cases 63, 64. Fragments of mummy-coffins and sepulchral tablets.

Over the Cases on the East and West sides of the room are placed casts from sculptured and painted bas-reliefs at the entrance of the small temple of Beit-Oually in Nubia. One represents the victories of Rameses II. over the Æthiopians; the other the victories of the same monarch over some Asiatic nations.

## SECOND EGYPTIAN ROOM.

The Egyptian antiquities are placed on the East side, the other being at present occupied by the Slade and other Collections of Glass, Roman and Etruscan Pottery, &c.

### EGYPTIAN ANTIQUITIES.

These are further illustrations of the Sepulchral remains of Egypt, of which the larger portion is placed in the First Egyptian Room.

Cases 1-11. Sepulchral tablets of painted wood, small models of sarcophagi and mummies, and boxes for holding sepulchral figures, as well as a large collection of the figures themselves. The latter are formed of wood, alabaster, stone, or porcelain, and have inscribed upon them a religious formula, as well as the name and titles of the deceased. They are supposed to have been deposited in the tombs by the relatives of the person who was buried. Some of the figures in the collection bear the names of Seti I., Amenophis III., and other kings.

Cases 12, 13. Sets of sepulchral vases, four in number, in which were placed the viscera of the dead, divided into four portions, and separately embalmed; their covers are heads of the Genii of the Amenti, to whom the respective portions were dedicated.

Cases 14-19. Wooden coffins, elaborately ornamented, and a wooden case painted black and yellow, which contained a set of vases.

Cases 20-23. Sepulchral vases similar to those already described.



Cases 24-30. Wooden figures of Ptah Socharis, and Osiris Pethemportes, made hollow to enclose the papyri deposited in the tombs.

Cases 31, 32. Cones or bricks stamped with inscriptions, containing the names of functionaries, and which probably formed part of the construction of the tombs. A hydria, or water-vase of alabaster, from Alexandria, lamps and vases.

In Table Case A are various objects in porcelain and glass, principally from the coverings of mummies, and inscriptions traced on stone, porcelain, and wood.

In Table Case B are portions of the outer coverings of mummies, and objects of the Greek and Roman period: amongst them are receipts for taxes.

In Table Case C are objects found in Egypt of the Christian period; Christian inscriptions; some specimens of beaded work; bronze plates, with Himyaritic inscriptions, from Arabia; some objects from Bethlehem and Mount Sinai; and Gnostic amulets.

In Table Case D are various specimens of tiles from Tel el Yahoudeh or Onias, with the name and titles of Rameses III., Asiatic and negro prisoners, and other subjects.

In Table Case E are specimens of Egyptian glass: amongst them vases in brilliant colours resembling the specimens discovered in Greece and Italy, one inscribed with the name of Thotmes III.

In Table Case F are specimens of ivory and other objects of the Greek and Roman period.

In the detached Cases 101, 102 are sepulchral boxes, tablets, and models of boats.

S. BIRCH.

## GLASS COLLECTIONS.

On the West side are placed the collections of ancient and more recent Glass, including the very valuable collection bequeathed to the British Museum in 1868 by the late Felix Slade, Esq. This collection is for the present exhibited to a great extent in a separate series, as an acknowledgment of so munificent a bequest.

It has been thought convenient to collect into the same room the other collections of Glass in the Museum, excepting the Assyrian. It has not, however, been found practicable to arrange the collections in any chronological order.

It may be sufficient to state, that the Antique Glass from the Slade Collection is placed in Table Case F, and the Upright Central Case L; that from the Temple Collection in Wall Case 54, 55; that from the General Collection in Table

Case H, and Wall Cases 56-61, excepting the Roman and Anglo-Saxon Glass found in England, which will be found in Wall Case 52, 53.

The Oriental Glass, which is chiefly from the Slade Collection, occupies Wall Case 44, 45. The Venetian Glass from the Slade Collection is placed in Central Case G, and Wall Cases 46-51; that from the General Collection in Wall Case 42, 43. The French, German, Dutch, and Spanish Glass is placed in Upright Central Case K.

The Egyptians, if not the inventors of making glass, were great workers in that substance, and applied a vitreous coating to pottery, and even stone. The Egyptian specimens in the Slade Collection are not so numerous as those in the Egyptian Collection (Table Case E in the same room), but include an elegant vase (No. 14) in the form of a papyrus sceptre, made for holding the antimony or *stibium* to be applied to the eyelids, and a very remarkable amulet (Case F) with the prenomén of Nuantef IV., a monarch of the XIth dynasty, placed by Lepsius between B.C. 2423 and 2380.

The glass works of Egypt must have been in full operation under the Ptolemies; and during the Roman dominion they produced very elaborate specimens, especially minute mosaic patterns, of which there are good examples (No. 92, &c.). These were made by arranging in the required patterns a number of slender rods of glass of various colours, fusing them together, and then drawing them out, so as to reduce the whole uniformly; transverse sections of the rod thus obtained would each exhibit the same pattern.

To the Phœnicians may in all probability be referred the numerous little vases of brilliant colours which are found in tombs throughout the borders of the Mediterranean (Table Cases F and H). They exhibit everywhere the same technical peculiarities, and as they differ somewhat in form and make from unquestionably Egyptian specimens, it is probable that they are the products of the only other great centre of glass making, the celebrated works at Sidon. The forms are more Greek than Egyptian, frequently *alabastra*, *amphoræ*, and *prafericula*.

The colouring is striking, generally in zigzag patterns of yellow, turquoise, or white, relieved by blue, brown, or green grounds. There are many fine vases of this kind in the collection, as well as one of the glass stands made to support them (No. 10).

To a later period of the Sidonian workshops may probably be referred a number of small bottles of various forms, blown in moulds, and which have been chiefly found in Syria, and the neighbouring islands. The specimens are in the shapes of dates, grapes, heads, &c. A handle, once forming part of a small cup, is stamped with the name of its maker, Artas the Sidonian, in Greek and Latin letters.

The making of glass at Rome is said to have been introduced by Egyptian workmen, and must have been much practised there, as

specimens of Roman glass are very numerous. The material was applied to a great number of uses, and the processes seem to have been quite as varied and well understood as in later times. The common clear glass has generally a greenish or bluish hue, though sometimes it is as white and brilliant as rock crystal; this latter kind was much valued by the Romans; the other transparent colours are, generally, various shades of blue, purple, yellow, and green. A delicate pink is supposed to derive its colour from gold. The opaque colours are less commonly employed singly, but they occur in shades of yellow, blue, green, and black. The beautiful iridescence with which many vases are covered is not intentionally produced, but is the effect of time, which has partially decomposed the surface of the glass.

The simpler vases are only blown, with handles, feet, or ornamental fillets subsequently added; others are blown into moulds, and exhibit various designs in relief; some of the bowls have projecting ribs, and have been termed pillar-moulded. (No. 203). On some vessels, chiefly belonging to a late period, shallow engraving, executed on the wheel, has been added; others are cut in regular patterns (see 171 and 321). Sometimes a coloured ground was coated with white opaque glass, which was afterwards cut away, so as to produce a cameo, as in the celebrated Portland Vase, exhibited in the Ornament Room, and in the Auldjo Vase (Case 58). In other instances, a number of different colours were employed, sometimes, as in the Egyptian specimens above noticed, forming regular mosaic designs, sometimes blended into a mass of scrolls, rosettes, &c., and at others imitating onyx, agate, mardrepore marble, or porphyries and other hard stones, though generally in more brilliant colours. Of these designs the variety is inconceivable, as may be seen by two bowls (Nos. 86, 387,) and numerous polished fragments. Occasionally gold-leaf was introduced, and at a late time the insides of cups and shallow bowls were decorated with patterns in gold-leaf, sometimes on the surface, sometimes enclosed between two layers of glass. To this class belong the fragments with Christian designs found in the catacombs of Rome (Case H), as well as the remains of a large disc from Cologne (No. 317), on which, though much broken, eight Christian subjects may be distinguished. The mosaic glass, and especially that imitating various stones, was much used to line the walls, or to form the pavements of rooms. Very clever imitations of gems were made, and the glass intaglios and cameos have preserved to us designs of some of the greatest gem engravers; being generally moulded from gems, and not themselves engraved.

After the fall of the Roman empire the glass works of the West must have gone to decay; of glass of the Anglo-Saxon period there are in the Slade Collection only three specimens, a tumbler with a convex base, from Selzen (No. 319), and two cups found in Kent. Those from the General Collection (Case 52, 53) are more numerous. In the East, glass making was still continued, probably in the neighbourhood of Damascus. There are in the collection some very fine specimens, all decorated with enamel and gilding. (Case 44, 45). Two lamps from mosques, made, according to the inscriptions, for Seifeddin 'Takuzde-



mur, Viceroy of Egypt, A.D. 1341, and Governor of Damascus in 1343, who died at Cairo in 1345. A third lamp was made for the Emir Skeykhoo, who died in 1356. There are likewise two fine bottles. To a later period belong some Persian specimens (Nos. 341-3), and a few Chinese; two of the latter bear the name of the Emperor Keen-lung, 1736-95.

The old known specimens of Venetian glass are of the fifteenth century. The earlier examples seem to have the forms of silver plate, and are frequently massive, and richly gilt and enamelled. One of the largest examples in the collection is a covered standing cup, with gilt ribs (No. 362). Two of the earliest, and also most elaborate specimens, are a green goblet with portraits (No. 361), and a blue cup with a triumph of Venus (No. 363). The shallow ribbed bowls, or dishes, are very handsome, and have frequently coats of arms in the centre; on one of them (No. 371) are the arms of the Doge Lorenzo Loredano, 1501-21, another (No. 372) has those of Leo X., 1513-21; a third (No. 374), those of Fabrizio Caretto, Grand Master of the Order of St. John, 1513-25.

The vases of blown glass are frequently very elegant, especially those in uncoloured glass; the stems are very often decorated with knots, wings, and fantastic additions in blue glass. Vases were also made entirely or partially of coloured glass, generally blue, purple, or green; sometimes a milky opalescent colour was produced, due, it is said, to arsenic; also an opaque white, derived probably from tin, which is further diversified with splashes of other colours. Another kind of variegated glass, which was called *calcedonio*, exhibits the streaky hues of the onyx, and was occasionally sprinkled with aventurine spots.

Great use was also made by the Venetians of rods of glass enclosing threads of opaque white glass (*laticinio*), arranged in various patterns. Thus was produced the elegant lace glass (*Vetro di trina*) in which Venice was unrivalled. Another variety (*à reticelli*) is ornamented with a network of opaque white lines, enclosing at the intersections bubbles of air. A goblet of this kind (No. 682) has in the foot a half sequin of Francesco Molino, Doge of Venice in 1647, marking the period at which it was made. The opaque white decoration is sometimes applied in parallel lines, sometimes in a wavy pattern, and exhibits endless variety.

The Venetians were great makers of beads, with which, for many centuries, they supplied the world. These were very often formed from sections of rods, with mosaic designs. Such sections were also sometimes worked up into vases (as by the ancient Romans), thence termed *millefiori*. Of these there are good examples in the collection.

In France, glass making was long practised, but it is difficult to distinguish the productions of that country. A remarkable goblet (No. 824) has on it the names of Jean and Antoinette Boucault, as well as their figures and device in enamel. It was probably made about 1530.

The earliest dated specimen from Germany in the collection has the

year 1571; it is a large cylindrical cup (*wiederkom*) with the Imperial eagle, bearing on its wings the arms of the states, towns, &c., composing the German Empire. The German specimens are heavy in form, and often richly enamelled with heraldic devices and figures. Some specimens are painted in grisaille or colours, like window glass; such is a goblet (No. 859) dated 1662, on which is represented a procession in honour of the birth of Maximilian Emanuel, afterwards Elector of Bavaria. The engraved specimens are well executed; one of them is signed by Herman Schwinger of Nurnberg. The Ruby glass for which Germany was renowned is said to have been invented by Kunckel; one of the specimens bears the cypher of Frederick the Great, King of Prussia.

In Flanders, glass seems to have been made in early times. In the sixteenth century many glass vessels (whether of native make or not is uncertain) were etched with various designs. Some of the specimens in the collection have portraits of historical personages, such as Philip IV. King of Spain, William II. of Orange, his wife Mary of England, Olden Barnevelt, and others. At a later time a delicate etching in dots was introduced; of this there are specimens signed by F. Greenwood, and several attributed to Wolf. Some of the Dutch engraved goblets are well designed, and show much richness of pattern.

The earlier Spanish examples resemble closely the Venetian, the later ones have numerous handles, and frilled excrescences, copied apparently from the cooling vases in terracotta, which were probably introduced into Spain by the Arabs. (Case K.)

Drinking-glasses seem to have been made in England in the sixteenth century, having been apparently then introduced by foreigners into Sussex and Surrey. Later, there were works in and near London, and the glass works of Bristol attained some reputation. To these last are attributed some specimens in the collection, which is not, however, rich in examples of English glass.

The collection of glass bequeathed by Mr. Slade consisted of about 960 specimens; but additions have been made since his death out of a fund bequeathed for the purpose, making a total of 1750 specimens.

AUGUSTUS W. FRANKS.

#### WITT COLLECTION.

Cases 62, 63. This is a series of antiquities, illustrating the Bath of the ancients, presented by George Witt, Esq., F.R.S., to which have been added the strigils from the general collection.

It includes specimens of the tiles and flues of which the hot chambers were constructed, a fine series of strigils used for scraping the skin, ointment vases of various materials, and other appliances of the bath. Among them may be noticed a set of bath utensils, found in a

Roman sarcophagus near Crefeld, Rhenish Prussia, consisting of a pair of strigils, an oil vase, a glass patera, præfericulum, &c.

#### ROMAN POTTERY WITH VITREOUS GLAZE.

Case 64. It was long considered that the Romans were unacquainted with the art of applying a vitreous glaze to pottery. Specimens, however, have from time to time been discovered which remove all doubt on the subject. It will be seen that they are not numerous, and that the glaze was more often applied to fine and ornamental wares than to coarse pottery.

#### ROMAN RED WARE.

This collection, which is placed in Cases 39-41 and beneath Table Case F, consists of specimens of a peculiar bright red ware, made at various places, but which was termed by the ancients Samian, having been probably first made at Samos. It was the earthenware most in use at the tables of the ancients, and exhibits great variety of ornamentation.

The principal sites of the manufactory were Capua and Arretium in Italy, Auvergne in France, where kilns have been found, the borders of the Rhine, and Spain. The various designs were impressed with small separate stamps on a concave mould, so that the patterns were in relief on the vase; the potters' names were very commonly added.

#### CYPRUS POTTERY.

Cases 33-38 contain a collection of pottery discovered in tombs in Cyprus, mostly by General Cesnola. No. 1 represents a class of vases from this island, with incised geometric patterns, and thought to be of great antiquity. No. 2 is a bottle of plain red polished ware; vases of this class, and having the same shapes as those of Cyprus, have been found in Egypt, and may be seen in Cases 30-32 of the First Egyptian Room. No. 3 is identical in shape and in its spiral patterns with two vases from Ialysus in Rhodes (First Vase Room, Cases 13-14). Nos. 4-5 are examples of the combination of painted patterns with the human form modelled in the round. No. 6, with its frieze of animals on a drab ground, in what is called the Græco-Phœnician style, resembles the vases from Camirus in Rhodes, and belongs to a style of very rare occurrence in Cyprus. No. 7 is an *oenochoe*, with the design of a chariot, driven at speed, from which a warrior discharges an arrow in a backward direction. The design seems copied from an Assyrian work of art. No. 8 is a deep cup, representing a



class of vases on which are complicated geometric patterns painted in black and purple on a drab ground. Vases in the form of animals and of peculiar shapes are arranged in Case 37. Nos. 9-10 are of shapes which recur at Ialysus.

## FIRST VASE ROOM.

In this and the next room is placed the collection of painted Fictile Vases discovered in tombs in Italy, Greece, the adjacent islands, and other parts of the Mediterranean. For the most part these vases are of Greek fabric, though the obsolete name "Etruscan" is still erroneously applied to them in England. Although nearly all of them have been found in tombs, they are very similar in form and fabric to those actually used in the ancient Greek household. The subjects with which these vases are decorated are chiefly derived from the divine or heroic legends of the Greeks, while others seem to be simply scenes from real life.

The Collection in this room is arranged for the most part in chronological order, commencing with the North and East sides of the room. The approximate dates under which the successive classes may be arranged are given on the large labels over the Wall Cases. The finest specimens are placed in or upon the detached Cases.

Class I. Cases 1-12. Table Case B and cruciform Case P. Vases of Archaic style (B.C. 700—B.C. 500).

Cases 1-5. Vases, with patterns perhaps in imitation of wickerwork, chiefly from Athens, Corinth, and Melos.

Cases 6-10. Vases from Camirus, in Rhodes, with geometrical patterns, or with men and animals, most of which belong to the style known as Græco-Phœnician.

Table Case B. Terracotta coffin and select vases from Camirus.

Cases 11-16. Vases of the Archaic style chiefly from Ialysus in Rhodes. *Presented by Professor J. Ruskin.* Among the designs on these vases may be noticed the cuttle-fish, and certain other ornaments which are found among the antiquities discovered at Mycenæ. The shapes of some of these vases also recur at Mycenæ.

Class II. Cases 17-30. Detached Cases C-H, K, and O. Vases, chiefly from Italy, of the transition period (B.C. 500—B.C. 440), in which greater mastery in drawing the figure is attained and more complicated groups are attempted. The figures are drawn in black, white, and crimson, on a red ground.

The finest specimens of this style are the *hydriæ*, or water-jugs

(Cases 17-24, Shelves 3, 4), and the *amphoræ* in the detached Cases on the East side of the room. The subjects relate chiefly to heroic myths and personages, and especially those of the Homeric poems and Epic Cycle generally.

Case O, on the West side of the room, contains Panathenaic *amphoræ* of this class, with inscriptions which show that they were given as prizes in the games at Athens.

Class III. Cases 31-54, and Cases I, L, M, N, Q. Vases of the finest period (B.C. 440—B.C. 330), with red figures on a black ground. They are unrivalled for beauty of shape and drawing, and the lustre of the black varnish. The vases on Table Case I., of the same period, are especially worthy of observation.

Cases 31-36. Vases from Camirus, Rhodes.

Cases 37-45. Vases, chiefly from Nola, in Campania.

Cases 55-56 contain a number of vases of various styles from Sicily, of which the most remarkable are the *lekythi*, painted in several colours on a white or cream-coloured ground (Case 55). Cases 57-60 contain Athenian vases, the finest of which are the vases belonging to Class III. (Cases 57-8, Shelf 4), and the *lekythi* with polychrome figures on a white ground (Cases 59-60). A selection of the finest Athenian *lekythi* with polychrome figures on a white ground, will be found on Table-cases C, M, E, and Q, and a selection of *rhytons* on Table Case F.

In the Guide to the First Vase Room, now on sale in this Room, will be found a description of the vases most remarkable either for interest of subject or beauty of style. These select specimens are distinguished in the Collection by blue labels corresponding with the numbers in the Guide.

Over Cases 41-60 are painted fac-similes, by Signor Campanari, of the walls of an Etruscan tomb at Tarquinii, decorated with a double frieze; in the lower are represented dances and entertainments, and in the upper, athletic games, as leaping, running, chariot-racing, hurling the *discus*, boxing, and the armed course; above is a large vase and two persons at an entertainment. The sides of the entrance of this tomb, decorated with two panthers, are represented above the Cases 31-40 and the roof, which is chequered, over Cases 11-30.

## SECOND VASE ROOM.

This room contains the later Greek Fictile Vases, the Greek and Roman Terracottas, the Greek and Roman Mural Paintings, and a number of miscellaneous antiquities. In this Collection a large number of Fictile Vases and other anti-

quities from the Blacas, Temple, and Castellani Collections have been incorporated.

The Greek Fictile Vases are arranged in Wall Cases (60-72, 1-23), and in the detached Cases in the centre. A large proportion of the subjects represented relates to Dionysiac festivals, to Venus and Cupid, or to funeral offerings.

The figures are painted in red or white on a black ground, the details being sometimes picked out in crimson or yellow. The black varnish is less brilliant than in the earlier styles, and the shapes of the vases less elegant; the ornaments are more florid, the composition more pretentious and elaborate, and the drawing mannered and often careless. These characteristics mark the decline of the art of vase-painting.

Cases 60-70 contain the black modelled ware, among which will be found many shapes imitated from vases in metal. Among them is a series of vases found at Capua, remarkable for elegance of shape and richness of gilt ornament. Cases 71-2 contain a series of vases from the Cyrenaica.

On the Table Cases in this room are the following select vases and terracottas :—

Table Case A. 1. *Krater*: Death of Priam and meeting of Menelaus and Helen: reverse, Olympic Deities, meeting of two heroes, and battle of Greeks and Amazons. (Minervini, *Bullettino Archeologico Napolitano*, 1858, p. 145.) 2. A terracotta urn from Athens, containing bones. 3. A *hernos* formed by four vases grouped together on a stand, and ornamented with reliefs.

Table Case B. 1. A collection of terracotta figures found in tombs at Tanagra in Boeotia. They are remarkable for grace and refinement in the composition and modelling.

2. A terracotta group of two female figures playing with *astragali* or knucklebones. *Capua. Castellani*.

Table Case C. Two Panathenaic *amphoræ*, both inscribed with the name of the Archon Pythodelos (B.C. 336). *Cervetri. Castellani*. A third, with the name of the Archon Niketes (B.C. 332). *Capua. Castellani*.

Table Case D. 1. *Krater*: The initiation of the Dioscuri at the lesser mysteries at Agra; reverse, Dionysos, Plutos, and other figures. —*Pourtales*.

2. *Krater*: Lykurgos slaying his family; reverse, Pelops, Hippodamia, Myrtilos. 3. *Krater*: Scene in Hades: Orpheus holding Cerberus. —*Blacas*.

Table Cases E, G. Six Panathenaic *amphoræ*, from the Cyrenaica. One of these bears the name of the Athenian archon Euthykritos, (B.C. 328); on another is the name of the archon Nikokrates, (B.C. 333); and



on a third, that of the archon Polyzelos, (B.C. 367). On the obverse of these vases is represented Athene Promachos, wearing an embroidered *peplos*, and treated according to an ancient hieratic type. On the reverse, chariot race and other athletic contests. On the centre vase (Table Case G) the group of Harmodios and Aristogeiton is painted on the shield of Athene. These vases are of great rarity, and are of special interest to the student of art, because their dates can be fixed by the names of the archons inscribed on them.

Table Case F. 1. Select terracottas from the Cyrenaica and Southern Italy.

2. Vase in the form of a helmeted female head.—*Vulci*.

3. *Amphora* with moulded reliefs.—*Blacas*.

Table Case H. 1. *Askos*, ornamented with Medusa's head, Victories, female figures and horses. *Canosa. Castellani*.

2. *Krater*: Ulysses and Diomedes surprising Dolon; a curious example of late grotesque drawing.

Table Case I. 1. *Krater*: Birth of Pandora; Satyric revels; reverse, Dancing lesson; Satyrs playing at ball.—*Apulia*.

2. Vase in shape of prow.

3. A select case of terracottas.

Table Case K. 1. *Hydria*: The carrying off of the Leukippidae, by Castor and Pollux; Herakles in the Garden of the Hesperides.

2. *Krater*: Battle of Centaurs and Lapithae; toilet of Helen; reverse, Dionysos, Satyrs, and Maenads. (Monumenti of the Roman Institute, 1854, pl. 16.)

3. *Hydria*: Group of Triptolemos, Demeter, Hekate, and Plutos. (Monumenti of the Roman Institute, I. pl. 4.)

Table Case L. 1. *Amphora*: The surprise of Thetis by Peleus; a polychrome painting with some of the details picked out with gold. This picture, remarkable for masterly drawing, is one of the few extant examples where gold has been combined with several colours in fictile art; reverse, Bacchus, Ariadne, a Satyr; a monochrome design. This exquisite specimen of ceramography was found at Camirus, in Rhodes.

2. *Krater*: Death of Hippolytos.—*Temple*.

3. *Krater*: The hunt of the Calydonian boar.—*Pourtalès*.

Table Case M. 1. *Krater*: Taking of Troy; Ajax Oileus seizing Cassandra at the altar of Athene; reverse, Meeting of two heroes.—*Blacas*.

2. *Krater*: Offerings at the tomb of a hero.

3. A vase moulded in the shape of a duck, with reliefs.—*Pourtalès*.

Table Case N. 1. *Krater*: Sacrifice of Iphigenia.—*Pourtalès*.

2. *Krater*: Mourners bringing offerings to a tomb; reverse, Satyrs and Maenads.—*Temple*.

3. Select terracotta figures of actors.

Table Case O. I. *Amphora* of black ware, with painted and moulded ornaments.—*Temple*.

2. *Amphora*: Meeting of Pelops and Hippodamia at the altar of Zeus.—*Ruvo*.

3. Vase of glazed ware in the form of a goose.—*Tanagra*.

Cases 24–31 contain some interesting specimens of mural paintings from Pompeii, Herculaneum, Stabiae, and Rome. Most of these are from the Temple and Blacas Collections. Among them may be particularly mentioned the head of a youthful flute-player—perhaps Olympus—from a tomb near Rome.—*Presented by Sir M. White Ridley.*

The Table Cases contain a variety of antiquities, which are arranged as follows:—

Table Case A. A collection of objects in lead, including some tablets inscribed with imprecations, found at Cnidus, and a number of inscribed sling bolts. In the same case is exhibited an interesting series of objects in amber, some of which are of an Archaic period.

Table Case C. A collection of plates, *rhytons*, and vases for the toilet, moulded in the form of animals and human figures.

Table Case D. A collection of objects in bone and ivory, such as caskets, gladiatorial *tesserae*, tickets for the theatre, dice; a lyre and two flutes made of sycamore, found in a tomb near Athens, on the road to Eleusis; a flageolet of bone and bronze, found in a tomb at Halicarnassus; fragments of wooden furniture from a tomb at Kertch.

Table Case E. An extensive and interesting series of Greek, Roman, and Byzantine weights and steelyards, collected by Mr. Burgon, Mr. Woodhouse of Corfu, and others.

Table Case G. A number of small figures, vases, and other objects, in glass, porcelain, ivory, bone, and other materials, discovered by Mr. Salzmann and Mr. Vice-Consul Biliotti in tombs at Camirus, in Rhodes. Most of these objects probably belong to the Græco-Phœnician period.

Table Case H. Various small figures in marble, stone, and terracotta, from Camirus in Rhodes, the Greek islands and mainland, and Sicily. Some of these appear to be Phœnician, others of the Græco-Phœnician period.

Table Case K. Archaic Greek terracotta masks and reliefs from Camirus, Melos, and Italy.

Table Case L. A collection of terracotta heads and figures from Dali (Idalium) in Cyprus, presented by their discoverer, D. E. Colnaghi, Esq., H. M. Consul, Florence. A series of terracottas obtained from Centuripae, in Sicily, by Mr. Consul Dennis. Fragments of terracotta figures, some of which are of great beauty, found on the site of the Mausoleum at Halicarnassus.

Table Case M. Terracotta moulds and masks, chiefly from Italy.

Table Case O. Lamps, plates, and other vases in moulded black ware.

Cases 32–41, at the South end of the room, contain a series of Græco-Roman terracotta reliefs, chiefly from the Towneley Collection. They originally decorated the walls of Roman buildings, and present an interesting variety of mythological subjects. The figures are generally well composed and modelled.

Cases 42, 43, contain several large terracotta figures of the same

Græco-Roman style. On the West side of the room, Cases 44-51 contain terracottas from Athens, Rhodes, Melos, the Cyrenaica, Sicily, Sardinia, Cyprus, and other parts of the Greek world. The most Archaic specimens, chiefly from Athens and from Camirus in Rhodes, are arranged in Cases 44-47. The greater part of the terracottas in Cases 48-51 are probably of Greek origin. Some of the most Archaic from Camirus, Cyprus, and Sardinia, (Cases 44-47) may be Phœnician. The terracottas in Cases 52-59 are principally from Magna Græcia.

### BRONZE ROOM.

This room contains the collection of Greek, Etruscan, and Roman Bronzes, with the exception of such as have been found in Great Britain, which are placed in the British Room. It was originally composed of the Sloane, Hamilton, Towneley, and Payne Knight Collections, to which have been added, in recent years, the bronzes bequeathed by Sir William Temple, those of the Blacas Collection, and many other interesting objects acquired by purchase or donation.

The Collection is arranged as far as possible in chronological order. The bronzes in the Western half of the room are chiefly Etruscan, and of the Archaic period. Those in the Eastern half are mostly Roman, or Græco-Roman.

On a Circular Table in the centre of the room, is a head of a goddess, of heroic size, said to have been found in Armenia. This head, which is of the finest period of Greek art, has been called Aphrodite, but is more probably Artemis. It has been broken off from a statue, the hand of which is exhibited in Case 44. *Castellani*. In the lower part of this circular case are four vases, one of which, from Bolsena, has an Etruscan inscription round the lip.

Cases 1-4 contain a number of bronzes of the Archaic period, chiefly from Etruria, among which may be particularly noticed (1) a male draped figure from Pizzirimonte, near Prato, in Tuscany; (2) a Marsyas, from Pistoia. These two bronzes are from the *Payne Knight Collection*; (3) Lioness.—*Woodhouse*; (4) a nude Aphrodite, which has formed the finial of a candelabrum. The attitude is that of the Venus of Medicis. It is probably the earliest extant example of this type. From the *Pulsky Collection*; (5) a small figure, probably of the Phœnician period, from the island of Cerigo (Cythera), presented by M. Roumano, of Corfu.

Cases 5-11 contain a number of bronzes, two fictile vases, and other antiquities, from the Polledrara tomb, near Vulci. (*Micali*, *Mon. Ined.*, pl. iv.)

Among these antiquities are several porcelain vases, ornamented



with Egyptian hieroglyphics, which were probably imported into Etruria through Phœnician commerce.

Cases 12-19, contain Etruscan candelabra, and a number of pieces of Etruscan, Greek, and Roman armour. Among these objects may be noticed two muzzles for horses, from the *Temple Collection*.

Cases 20-25 contain two Etruscan tripods, and Greek and Etruscan vases and handles of vases. Among these may be particularly noticed a *krater* from the *Pourtales Collection*, found at Locri, (Case 23).

Cases 26-30 contain Greek and Etruscan vases, mirror handles and other objects. In Case 30 is an Etruscan male figure, found at Falterona. (Micali, *Mon. Ined.*, pl. xiv. 3.)

Cases 31-53 contain figures mostly Roman or Græco-Roman. A selection of the finest of these occupies Cases 44-47, in the centre of the East side of the room; the remainder are arranged in mythological classes. Among the select bronzes in the central Cases the following may be particularly noticed:

Venus stooping to adjust her sandal. This figure, which was obtained from Greece, belongs to the best period of ancient art.

Bacchus.—*Temple*.

Apollo. The god appears to be pointing with his forefinger towards some object on the ground; hence it has been conjectured that Apollo is here represented at the moment when he orders the flaying of Marsyas.—*Towneley*.

Hercules holding the apples of the Hesperides; from Byblus, in Phœnicia. (Museum Marbles, iii. pl. 2.)

A seated figure, probably representing a Greek philosopher, said to have been found in dredging the harbour of Brindisi.

Meleager aiming a spear.—*Pulsky*. (Monumenti of Roman Institute, 1854, pl. 8.)

Bust of the Emperor Lucius Verus.—*Blacas*.

Bacchus.—*Payne Knight*.

Mercury.—From the Basilicata. *Presented by Robert Goff, Esq.*

Cases 54-5 contain a figurehead of an ancient galley found on the scene of the battle of Actium. *Presented by Her Majesty the Queen*.

Cases 54-60 contain Roman candelabra, lamps, and other antiquities, among which may be particularly mentioned, a bronze lamp, found at Paris, ornamented with dolphins, lions, and Satyric masks (Case 56), and a Roman seat, *bisellium*, inlaid with silver (Cases 54-5).

In Case B are the following select bronzes, of the Archaic period, and of Etruscan or Greek origin:—

1. A bronze Etruscan *lebes*, with engraved frieze of exploits of Hercules, athletic games and animals round the body, and figures of mounted Amazons round the rim, found at Capua. (Monumenti of the Roman Institute, v. pl. 25.)

2. An *amphora*, the handles formed of male figures bent backwards, found at Vulci.—*Pourtales*.

3. A figure in tufaceous stone, from the Polledrara tomb near Vulci (Micali, Mon. Ined., pl. vi. fig. 1.)

4. An Etruscan draped female figure; from Sessa, on the Volturno, in Italy,—a most ancient and interesting specimen of casting in bronze.

5. A Mars; from the lake of Falterona. (Micali, Mon. Ined., pl. xii.)

6. A *cista*, round the body of which are engraved scenes supposed to refer to the Bacchic Mysteries; on the cover is a group of Peleus wrestling with Atalanta. (Gerhard, Kleine Schriften, pl. lvii.—viii.)

7. A draped female figure (Diana?); from the lake of Falterona. (Micali, Mon. Ined., pl. xiii. 1, 2.)

8. A recumbent male figure, which has probably ornamented the cover of a bronze oblong *cista*.

9. A group of Peleus and Atalanta wrestling.

10. Hercules; from the lake of Falterona. (Micali, Mon. Ined., pl. xv.)

11. Hercules subduing the horses of Diomedes, king of Thrace; from Palestrina (Præneste).

12. A *cista*: round the body is engraved a frieze, representing the sacrifice of Trojan captives at the funeral pyre of Patroclus. On the cover are engraved three Nereids, riding on marine monsters, and carrying the armour of Achilles. The whole is surmounted by a group in the round of a Satyr and a Mænad. This *cista* is remarkable for the masterly drawing of the figures in the frieze, and the interest of the subject. Found at Palestrina. (Raoul-Rochette, Mon. Ined. pl. xx. 1.). Formerly in the Durand and Reville Collections.

13. A small draped figure, probably of Aphrodite-Persephone inscribed with a dedication in Archaic Greek letters, and engraved, Gerhard, Kleine Schriften, pl. xxxi 6.—*Towneley*.

14. A Mirror, supported by a draped figure of Aphrodite, on either side of whose head is Eros, represented as if floating in the air. From Athens.

15. Demeter seated in a rustic car. From Amelia, in Etruria.

16. Etruscan helmet, inscribed with a dedication by Hiero I., king of Syracuse, after his naval victory over the Tyrrhenians, B.C. 474. This helmet was found at Olympia, where it must have formed part of the trophy dedicated by Hiero. The inscription is one of the earliest specimens of Greek palæography of which the date can be fixed. (Boeckh, C. I., No. 16.)

17. A mirror, supported by a draped figure of Aphrodite, on either side of whose head is a boy, probably Eros. From Sunium in Attica.

18. Apollo, holding in his left hand a fawn, and similar to a figure on the copper coins of Miletus.—*Payne Knight*.

19. A bearded warrior, with shoes turned up at the toes.—*Pourtales*.

20. Bronze helmet, inscribed with an Archaic dedication to Zeus by the Argives, after a victory over the Corinthians. Found at Olympia. (Boeckh, C. I., No. 29.)—*Payne Knight*.

21. *Cista*, round the body of which is engraved the sacrifice of Polyxena to the manes of Achilles. (Gerhard, Etruskische Spiegel, I., pl. xv., xvi.)—*Towneley*.

Case E contains the following select bronzes :—

1. A figure of a Satyr springing forward. The attitude is very similar to that of the male figure in a group thought to represent Marsyas and Athena. (Archäol. Zeitung, 1874, pl. 8).—*Greece.*

2. Silenos standing on a triangular base, and bearing on his head a basket which has been surmounted by a floral ornament.

3. Winged head, probably of Hypnos, the god of sleep. A most beautiful example of sculpture in bronze, found at Perugia, and engraved in the Monumenti of the Roman Institute, 1856, pl. iii.

4. Iconic head, life-size, found at Cyrene, under the pavement of the temple of Apollo. The eyes have been enamelled. The type of face seems that of an African. (Smith and Porcher, Discoveries at Cyrene, pl. lxvi.)

5. Head, life-size, probably of a poet, brought from Constantinople in the beginning of the 17th century. (Museum Marbles, Pt. II., pl. xxxix.)

6. Venus arranging her tresses.—*Pourtales.*

7. Mercury, on its original base inlaid with silver. Round the neck is the Gaulish torc in gold. This figure was found in France; (Specimens of Antient Sculpture, I., pl. xxxiii.)—*Payne Knight.*

8. Hercules, found at Bavay in France. (Specimens of Antient Sculpture, II., pl. xxxiii.) *Presented by Mr. E. Drummond Hay.*

9. Jupiter, found at Paramythia, in Northern Greece.—*Payne Knight.* (Specimens of Antient Sculpture, I., pl. xxxii.)

10. Jupiter, found in Hungary.—*Pourtales.*

11. Mask of Mercury.—*Payne Knight.* (Specimens of Antient Sculpture, I., pl. xviii.)

12. Jupiter, found at Paramythia. (Specimens of Antient Sculpture, I., pl. lii.)—*Payne Knight.*

13. Apollo bending his bow. Found at Paramythia. (Specimens of Antient Sculpture, I., pl. xliii.)—*Payne Knight.*

14. Silver boy playing with a goose. Found at Alexandria, with a number of silver coins of the earlier Ptolemies.

15. Lamp, in the form of a greyhound's head. The spout is formed by a hare's head, held in the greyhound's mouth. Found at Nocera, in Italy.

16. A boy playing at the game of *morra*, perhaps, from a group representing Ganymedes playing with Eros; said to have been found at Foggia, in Southern Italy.

Table Case D contains a number of select bronzes, among which may be noticed the bronzes of Siris—two shoulder-pieces of Greek armour found in Magna Græcia, and ornamented with groups in relief in the finest style; a youthful heroic figure seated, found at Tarentum, and in the finest style; a bronze mirror in a highly ornamented frame of unusual size, found at Locri; a mirror, on which is engraved the meeting of Helen and Menelaus at the taking of Troy; a group of Boreas and Oreithyia, from a tomb in the island of Calymnos; an iron sword in bronze scabbard, with relief representing an Emperor,



probably Tiberius, receiving a victorious general, probably Germanicus. Found at Mayence, 1848. *Presented by the late Felix Slade, Esq.*

Table Case C contains two Archaic figures of horsemen, embossed in silver, found at Perugia; a disk with an engraving of an athlete with the *halteres*, on reverse, an athlete throwing a spear, from Sicily; a hare inscribed with a dedication to Apollo; a bronze plate from Elis inscribed with a treaty; two decrees of the people of Corcyra (Corfu); dikast's tickets from Athens, and a tablet with Oscan inscriptions on both sides, found at Agnone, near Bovianum.

On Table Cases A, C, D, and F, are arranged, Etruscan mirrors, on which various mythological subjects are engraved. Case A contains armlets, *fibulae*, and various personal ornaments and trappings. Case F, locks, keys, and a variety of small implements.

In the circular Case G is a silver bucket, on which is a frieze, in relief, representing the four Seasons. Found near Vienne, in France. (Annali of the Roman Institute, 1852. Tav. d'Agg., L.)

The circular case H contains specimens of bronze armour, among which may be noticed the cuirass from the *Temple Collection*.

In the circular case I are (1) a *lebes*, the cover of which is surmounted by a figure of Aphrodite-Persephone, round whom are figures on horseback and Sirens; (2) a small figure of Aphrodite-Persephone, remarkable for beauty and preservation. In the eyes are set diamonds. From Verona. *Castellani*. (3) Athene Promachos, from Athens. *Castellani*. (4) A mirror, the handle formed by a figure of Aphrodite-Persephone. From Greece. *Castellani*.

Table Case K contains a *cista*, the body of which has been partly formed of leather. On the cover is incised a battle scene; the handle is formed by two warriors carrying the dead body of a third warrior.

C. T. NEWTON.

## BRITISH AND MEDIEVAL ROOM.

This room contains three collections:—the British, consisting of Antiquities found in Great Britain and Ireland, extending from the earliest periods to the Norman Conquest, the Early Christian, and the Medieval, comprising all remains of the Middle Ages, both English and Foreign.

### BRITISH COLLECTION.

This Collection is arranged, as far as possible, in chronological order, as follows:—

Cases 1–42. British Antiquities, anterior to the Romans.

Cases 43–75. Roman Antiquities found in Britain.

Cases 76–96. Anglo-Saxon Antiquities.

## BRITISH ANTIQUITIES.

The remains of the inhabitants of the British islands, previous to the Roman invasion, embrace the *Stone*, *Bronze*, and a portion of the *Iron* period of Northern Antiquaries. They have, for convenience, been classed according to their materials, and in the order corresponding to that of the supposed introduction of such materials into this country. With them have been placed similar remains from other countries for the purpose of illustration.

Cases 1-4. Middle Shelf (Case 1, 2). Antiquities found in the Drift Beds of England and France, chiefly flint implements of a peculiar pear-shaped form. These have been found with the bones of the mammoth and other extinct animals, and are believed to be the oldest remains of human industry hitherto discovered. Other Shelves. Implements known as stone celts. They appear by analogous examples, still in use among nations in a savage state, to have been mounted in wooden handles, and bound round with leathern thongs, so as to form axes and adzes. These are from England, Scotland, and Ireland.

Cases 5, 12. Upper Shelves. Early pottery found in tumuli. The larger urns have contained burnt ashes; the smaller may have been used as vessels for food and drink at the funeral feast. One urn was found in a barrow on the banks of the river Alaw, Anglesea, and has been supposed to have contained the ashes of Bronwen the Fair, aunt to Caractacus, who died about A.D. 50, but is probably much older; also urns found in Jersey, Ireland, and Scotland; the Scotch and Irish are generally more elaborately ornamented than the English. Middle Shelves. Flint knives and arrow-heads, from England and Ireland; among them a stone celt, with the remains of its original wooden handle. Lower Shelves. Early pottery from England. Stone implements from foreign countries—Italy, Portugal, Germany, Denmark, &c.

Cases 11, 12. Various stone implements, viz.:—Stone hammers, or axe-heads, pierced to receive a wooden shaft; they have been occasionally found with bronze weapons, and appear to be of a later date than the stone celts. Oval pebbles, which may have been sling-stones. Small sharpening stones or hones, pierced at one end for suspension. Circular pierced disks, which have been used as beads, or as whorls for the spindle.

Table Case A. A mass of breccia from the floor of a cave at Les Eyzies, Dordogne, containing flint and bone implements.

Table Case B. In the central part is a large collection of implements in reindeer-horn, flint, &c., from caves in the South of France, some of them from Bruniquel, near Montauban, others from Dordogne. In the Desks are placed a series of antiquities discovered on the site

of dwellings built on piles in the shallow parts of the Swiss lakes. They afford much information as to the arts, habits, and food of the ancient inhabitants.

Cases 13-25. Implements and weapons made of bronze, a mixed metal, usually compounded of about nine-tenths of copper to one-tenth of tin. The sites of discovery are, as far as possible, marked on the objects themselves.

Cases 13-15. Illustrations of early British Metallurgy. Lower Shelf. Stone mullers or hammers, which have been employed in ancient copper mines to break the ore; cakes of copper and bronze; stone mould for making rough bronze celts, and casts of moulds for making bronze swords. Middle Shelf. Bronze moulds for casting celts of various forms; unfinished and imperfectly formed celts from various localities, and lumps of copper found with them.

Cases 16-20. Bronze implements, commonly called celts (from the Latin *celtis*, a chisel), which appear to have been affixed to wooden handles. They are arranged, according to their forms, into classes. On the upper shelf, two bronze shields, found in Wales.

Cases 21, 22. Middle Shelf. Blades of bronze daggers and knives, of which the handles were of wood, horn, or bone. Lower Shelf. Bronze swords, among which some fine specimens from the Thames; and ends of sword-sheaths. Upper Shelf. Bronze swords from Ireland.

Cases 23-25. Bronze shield found in the Isis, near Dorchester. Two shields found in the Thames. Bronze spear-heads, some with rivet holes, in which a wooden peg appears to have been fixed; others without rivet holes, but with loops at the side, or piercings in the blade, for thongs. Bronze trumpets from Ireland.

Cases 26-35. Miscellaneous antiquities of the Bronze period, and bronze implements from foreign countries; likewise a large series of urns from Germany and Denmark. Below have been placed, for want of other space, three Roman leaden coffins from East Ham, Essex.

In Cases 36-42 are placed various antiquities found in England, Scotland, and Ireland, chiefly of bronze, and characterized by a peculiar style of ornament, and frequently by the presence of enamel. They are probably late Celtic, of about the time of the Roman invasion of England. Among them a shield and a helmet found in the Thames; a shield found in the Witham, Lincolnshire; a helmet without locality; horse-trappings and a sword found at Stanwick, in Yorkshire, during excavations made by the Duke of Northumberland, by whom they were presented; similar trappings from Polden Hill, Somersetshire and Westhall, Suffolk.

Table Case D. A continuation of the series of late Celtic antiquities, among which are portions of some remarkable shields from the Thames; also foreign antiquities of the earlier Iron Period.

#### ROMAN ANTIQUITIES FOUND IN BRITAIN.

These differ little from the Roman remains found in other countries. Some of them were no doubt imported, but the



greater part must have been made in some of the flourishing cities founded in Britain by the Romans, who were more or less masters of this country for upwards of 400 years.

Table Case E. Smaller Roman antiquities found in Britain.

Cases 47-51. Roman vessels of coarse earthenware, principally employed as cinerary urns. Over the Cases, two large *amphoræ*, the necks of which have been broken off to admit urns, forming rude sarcophagi.

Cases 52, 53. Specimens of Roman earthenware, found on the site of kilns in the New Forest in which they were manufactured. They are generally "castaways," ill-made or imperfect.

Cases 54, 57. Roman pottery of various kinds. The localities in which the specimens were found are inscribed upon them as far as possible. Underneath: Roman roof, flue, and draining tiles; also two Roman coffins of lead, found near London.

Cases 58, 59. Roman lamps variously ornamented. Two specimens of earthenware with a yellow vitreous glaze. A singular vase in the form of a human head, dedicated to Mercury, from Lincoln. Underneath: Roman *Mortaria*, or pounding-vessels.

Cases 60-63. Roman red moulded ware, commonly called Samian. The finer kind, known as Aretine ware, was made chiefly at Aretium in Italy; the coarser in Germany and Eastern Gaul, and imported into England. A fragment of a mould may be seen in Case 63; and a type for impressing a mould.

Case 64. Plain Samian ware, probably the ware employed for domestic purposes. The specimens are generally stamped with potters' names.

Cases 65-75. Miscellaneous Roman Antiquities. Among them may be noticed a vase turned in Kimmeridge coal, and the waste pieces found on the site of the manufactory on the coast of Dorsetshire; clay moulds for counterfeit coins; brooches and other personal ornaments; bronzes. Case 70. Antiquities discovered at Ribchester, in Lancashire. On the middle shelf, a bronze head of the Emperor Hadrian, found in the Thames, below a Roman tomb found in the Great Park, Windsor, and presented by Her Majesty. Cases 71-75. Edicts granting privileges to some of the auxiliaries serving in Britain under Trajan and Hadrian. Votive offerings, small figures, etc.

In Table Case F are placed Roman Antiquities discovered in London, principally from the collection made by Mr. Roach Smith. They consist of statuettes, personal ornaments, implements of various kinds, such as knives, and *styli* for writing, fragments of pottery, leather sandals, and other remains of the Roman occupants of London. On a pedestal at the end of the case is a fine bronze figure from Barking Hall, Suffolk.

#### ANGLO-SAXON ANTIQUITIES.

These antiquities, which have been chiefly found in ancient cemeteries, belong for the most part to the earlier periods of

the Heptarchy. They show that both burying and burning the dead were practised in England by the Saxons.

Cases 76-80. On the upper shelves are black sepulchral urns, found chiefly in Norfolk and Suffolk. On the middle shelf, groups of antiquities discovered together in Anglo-Saxon cemeteries. On the lower shelf of these and the following Cases are antiquities discovered by Dr. Bähr in Livonia and Courland, of about the same age as the Saxon antiquities, and placed here for comparison.

Cases 81-86. Various Saxon weapons, such as swords, spear-heads, and bosses of shields. A bucket of wood with bronze mountings. A bronze bucket, which was discovered at Hexham full of coins of the kings of Northumbria.

In Table Case G are placed personal ornaments of various kinds, and a series of swords and spears discovered in the Thames. Among them a sword with a Runic alphabet. There is also a remarkable casket of whale's bone, with various subjects and Runic inscriptions, probably made in Northumbria in the 9th century.

### EARLY CHRISTIAN COLLECTION.

This is a small Collection occupying one end of Table Case G, and Case 17. Among the specimens are numerous lamps with the XP, crosses, and subjects from the Old and New Testaments. The most remarkable part of it, a number of pieces of glass vases with ornaments in gold leaf, discovered in the Catacombs of Rome, has been removed to the Glass Collection in the Second Egyptian Room.

In an upright Case P, in the centre of the room, are arranged caskets and ornaments of various kinds, found at Rome in 1793, and obtained with the Blacas Collection.

### MEDIEVAL COLLECTION.

This Collection is arranged with reference partly to the material of which the objects are formed, partly to the use for which they were intended.

Cases 88-97. SCULPTURE AND CARVING, in various materials, but chiefly in ivory, the specimens of which are arranged, as far as practicable, in chronological order. The earlier examples are generally writing tablets or portions of the bindings of books. Those of the 13th, 14th, and 15th centuries are principally tablets for devotional purposes. The later carvings are of a miscellaneous character.

In Table Case H are placed other specimens of Sculpture: on one

side are early writing tablets or diptychs, mirror-cases, combs, chessmen and draughtsmen: on the other are vases of rock crystal and jasper, and a few historical relics, viz.: a shrine, probably given by Margaret, wife of Edward I., to her step-daughter, Isabella; a dial, with the arms of Robert Devereux, Earl of Essex; casket made out of Shakespeare's Mulberry Tree, presented to David Garrick, in 1769; and the Punchbowl of Robert Burns.

Cases 98-100. **PAINTINGS.** Portions of the frescoes in St. Stephen's Chapel, Westminster, executed in the latter half of the 14th century.

Cases 101-107. Various miscellaneous objects, chiefly relating to Britain, including an Irish crozier and several bells of Irish saints; a block of Herne's Oak formerly in Windsor Park.

Cases 108-115. **METAL WORK** of various kinds; ecclesiastical relics; vases and dishes; arms and armour.

Table Cases K and L. **MATRICES OF SEALS**, both English and foreign.

In Upright Case M is a curious piece of clockwork in the form of a ship, presented by Octavius Morgau, Esq., M.P., and a collection of horodeictical instruments, such as astrolabes, quadrants, and dials of various kinds.

Table Case N. **ENAMELS.**—German enamels of the 12th and 13th centuries; French enamels, made at Limoges, during the same period; Italian painted enamels; others painted at Limoges during the 16th and 17th centuries; a few specimens of English enamelling and jewelry, among which may be noticed the arms of the Protector Somerset; knives ornamented in various ways.

Cases 116-121. **ENGLISH POTTERY.**—On the upper shelves are placed green and brown glazed vessels of coarse manufacture, and of various dates, from the 13th to the 16th century. Middle shelf. Ornamental earthenware and porcelain, including a bowl made and painted at Bow, in 1760, by Thomas Craft, being one of the few specimens which can with certainty be referred to that manufactory; a copy of the Portland vase, made by Wedgwood; several Wedgwood medallions, and specimens of English delft. A bust of Prince Rupert, made by John Dwight, at Fulham. On the lower shelf, a series of ornamental paving and wall tiles, varying in date from the 13th to the 16th century.

Cases 122-125. **POTTERY.**—A number of fragments of mediæval pottery of various kinds, found on the site of the Temple of Diana at Ephesus.

Cases 125-136. **ITALIAN MAJOLICA.**—This enamelled earthenware derives its name from the Island of Majorca, whence it is supposed to have been first imported into Italy, though it does not appear whether it was made in the island, or brought thither from Spain. The art was cultivated in some of the smaller states of Central Italy. Specimens are here exhibited, made at Faenza, Gubbio, Pesaro, Castel Durante, Urbino, Deruta, Caffagiolo, Rimini, Padua, Sienna, and Venice. The earlier, which date from A.D. 1480-1510, are large dishes enamelled on one side only, and painted either in strong bright colours, or in blue and yellow; in the latter case the yellow has



a metallic reflection, or iridescence. The next class, dating from about A.D. 1510-1525, is smaller in size, frequently ornamented with arabesque borders, and with metallic yellow and ruby. Some of the finest specimens were painted at Gubbio, by Giorgio Andreoli. The third, A.D. 1530-1550, is painted with subjects occupying the whole of the plate, and generally taken from Roman mythology; the colours are bright, rarely iridescent, and with a great preponderance of yellow. In the next class, A.D. 1560-1580, the drawing deteriorates, the colouring becomes dull and brown, and the subjects are frequently enclosed in arabesque borders on a white ground. In the next century Majolica almost entirely disappears, having been probably driven out of esteem by Oriental porcelain.

In Central Case O are placed some of the choicer vases of Italian Majolica. They are chiefly made to contain drugs, &c., for the *Spezierie* attached to most convents and large private dwellings in the sixteenth century. In the same case are a pair of fine vases of Chelsea porcelain, made by M. Spremont, in 1762, and presented in 1763.

Cases 136-139. GERMAN STONEWARE.—This is a hard dense pottery, well suited to domestic purposes, and sometimes richly ornamented. It was made in the neighbourhood of the Lower Rhine. There are three principal varieties. The first, consisting usually of cylindrical jugs, narrowing at the top, is a yellowish white, with ornaments well executed; it was made at Siegburg, near Bonn. The second is brown, decorated with coats of arms or figures under arches, and was chiefly manufactured in the old Duchy of Limburg. The third is grey, with ornaments in relief, the ground being usually coloured blue or dark maroon. Vessels of the second class were extensively imported into England during the 16th century, and are frequently found in excavations under old buildings.

AUGUSTUS W. FRANKS.

Between the British and Medieval Room and the Ethnographical Room is a door leading to the

#### COLLECTION OF GOLD ORNAMENTS AND GEMS.

The gold ornaments are arranged in cases round the East and South sides of the room.

Case A contains specimens of Medieval and more recent jewellery.

In Case B are Byzantine, and foreign Teutonic gold ornaments, as well as specimens of Anglo-Saxon and Anglo-Roman jewellery.

Cases C and D contain gold ornaments of the Celtic period, found in Great Britain and Ireland, and a few foreign examples of the same date.

Case E contains ornaments from Babylonia and Egypt.

In Cases F to Q is exhibited the series of Etruscan, Greek, and Roman ornaments, to which in recent years the most important additions have been the Blacas and Castellani Collections. In Cases F to I the ornaments, both Greek and Etruscan, are of an early period. Case F contains ornaments in silver and amber from Paestrina (Præneste). Case G contains ornaments from Sardinia and Sicily. Case H contains ornaments from Camirus and Ialysus, in Rhodes. The finest specimens of Greek work are in Cases L, M, N. The latest specimens of the goldsmiths' art among the Greeks and Romans are arranged in P, Q of this line of cases.

In the upper part of Cases O and P are arranged statuettes, vases, *fibulæ*, torcs, and other ornaments of silver. Among the statuettes may be noticed a female figure, personifying a city, and having above her head a row of busts of deities representing the seven days of the week; below these are two busts of the Dioscuri; in her left hand is a cornucopia, from which issue the heads of a Roman Emperor and Empress. This figure was found near Maçon, on the Saone, in 1764 (*Gazette Arch.* iii. p. 82). *Payne Knight Coll.* With it were found the following silver figures in the same case: Jupiter, Diana, a *Genius*, and four statuettes of Mercury.

The collection of finger rings of all ages is exhibited in Case U.

The collection of gems comprising examples of Etruscan, Greek, Roman, Medieval, and Modern Intaglios and Cameos, has been formed chiefly by the bequests of the Payne Knight and Cracherode collections, and by the purchase of the Towneley, Hamilton, Blacas and Castellani collections. The gems in the form of scarabs, mostly from Etruria, are arranged in Case R. In this Case also are the Archaic gems, found chiefly in the Greek islands, and thought to represent a stage of gem engraving which preceded the development of purely Hellenic art. Gems of this class have been found at Mycenæ. The series of Greek and Roman intaglios and cameos is exhibited in a large Case (S) in the centre of the room and in Case T. The arrangement is according to subject, and begins at the corner of Case S, nearest the entrance, with Jupiter and his cycle of mythic persons, after which come the other deities and heroes of mythology, followed by royal, imperial, and other portraits. In Case T are subjects relating to ordinary life, figures of animals, symbols, inscriptions, and miscellaneous subjects.

On Case R is placed the celebrated glass vase, deposited by its owner the Duke of Portland, in the British Museum, and thence popularly known as the Portland Vase. It was found in a marble sarcophagus in the Monte del Grano, near Rome, and was formerly in the Barberini palace. The ground of the vase is of blue glass; the design is cut in a layer of opaque white glass. The composition is supposed to represent, on the obverse, the meeting of Peleus and Thetis on Mount Pelion, and on the reverse, Thetis consenting to be the bride of Peleus, in the presence of Poseidon and Eros. On the bottom of the vase, which is detached, is a bust of Atys.

On Case T is placed an alabaster jar, found on the site of the Mausoleum, at Halicarnassus, near a great stone, which probably closed the entrance to the sepulchral chamber. The jar is inscribed "Xerxes, the Great King," in the Persian, Median, Assyrian, and Egyptian languages.

In Case W is exhibited a series of trays from the general collection of coins, Greek, Roman, and English. This exhibition is periodically changed.

In the passage leading to the collection of gold ornaments and gems, is a case containing electrotype copies of the finest and most interesting Greek coins, and of the Roman gold and English gold coins. The Greek electrotypes are separately described in the "Guide to the Select Greek Coins exhibited in Electrotypes," which is on sale in this Room.

C. T. NEWTON.

### ETHNOGRAPHICAL ROOM.

In this room are placed both the antiquities, and the objects in modern use, belonging to all nations not of European race. Any scientific arrangement has been rendered difficult by want of space; but the objects have been, as far as practicable, arranged in geographical order.

In the centre of the room are placed the following objects:—

A Table Case containing antiquities found in excavations in India.

Three large cases of dresses and implements in use among the Esquimaux tribes; as well as objects illustrative of the late Arctic expeditions, chiefly collected by Sir John Barrow, and presented by Mr. Barrow.

A Table Case containing Peruvian and Mexican antiquities.

Against the pilasters are placed the following objects:—

An inlaid Indian cabinet.

An impression of the foot of Gaudma.

A Chinese bronze bell.

A figure of Pattinee Dewa in bronze.

The contents of the side Cases are as follows:—

Cases 1-7. AFRICA.—Cases 1-3. Upper Shelf, specimens of cotton fabrics, chiefly obtained during the Niger Expedition. Middle Shelf, shields from East Central Africa; weapons, and beads used in the African trade. Lower Shelf, arrows in leathern quivers made by the Mandingo tribes of West Africa; Tuarik saddle, wooden stool from Ashantee. Cases 4, 5. Upper Shelf, hats and boxes made of calabashes. Middle Shelf, gourds, spoons, leather pouches, etc. Lower Shelf, dresses, pipes, and ornaments of various kinds, chiefly



worn or used by the natives of Kaffirland. Cases 6, 7. Upper Shelf, spears, bows, and specimens of pottery. Middle Shelf, spears, wooden fetiches, tobacco pipes, and ornaments. Lower Shelf, musical instruments.

Cases 8-13. CHINA, JAPAN, AND THE ASIATIC ISLANDS.—Cases 8, 9. Upper Shelf, Chinese hats, lantern, and figures. Middle Shelf, figures sculptured in various materials, or cast in bronze, from China. Lower Shelf, bells, mirrors, etc., in bronze, from China. Cases 10, 11. Upper Shelf, Chinese bow and arrows, lantern, Japanese travelling cases. Middle Shelf, swords, bronzes, and sculptured buttons in ivory, all from Japan. Lower Shelf, honorary tablets, porcelain, and shoes, chiefly from China. Cases 12, 13. Upper Shelves, idols, and two singular helmets from the island of Nias, near Sumatra, from Sir Stamford Raffles' Collection; shield and dress from Borneo. Lower Shelf, Chinese musical instruments.

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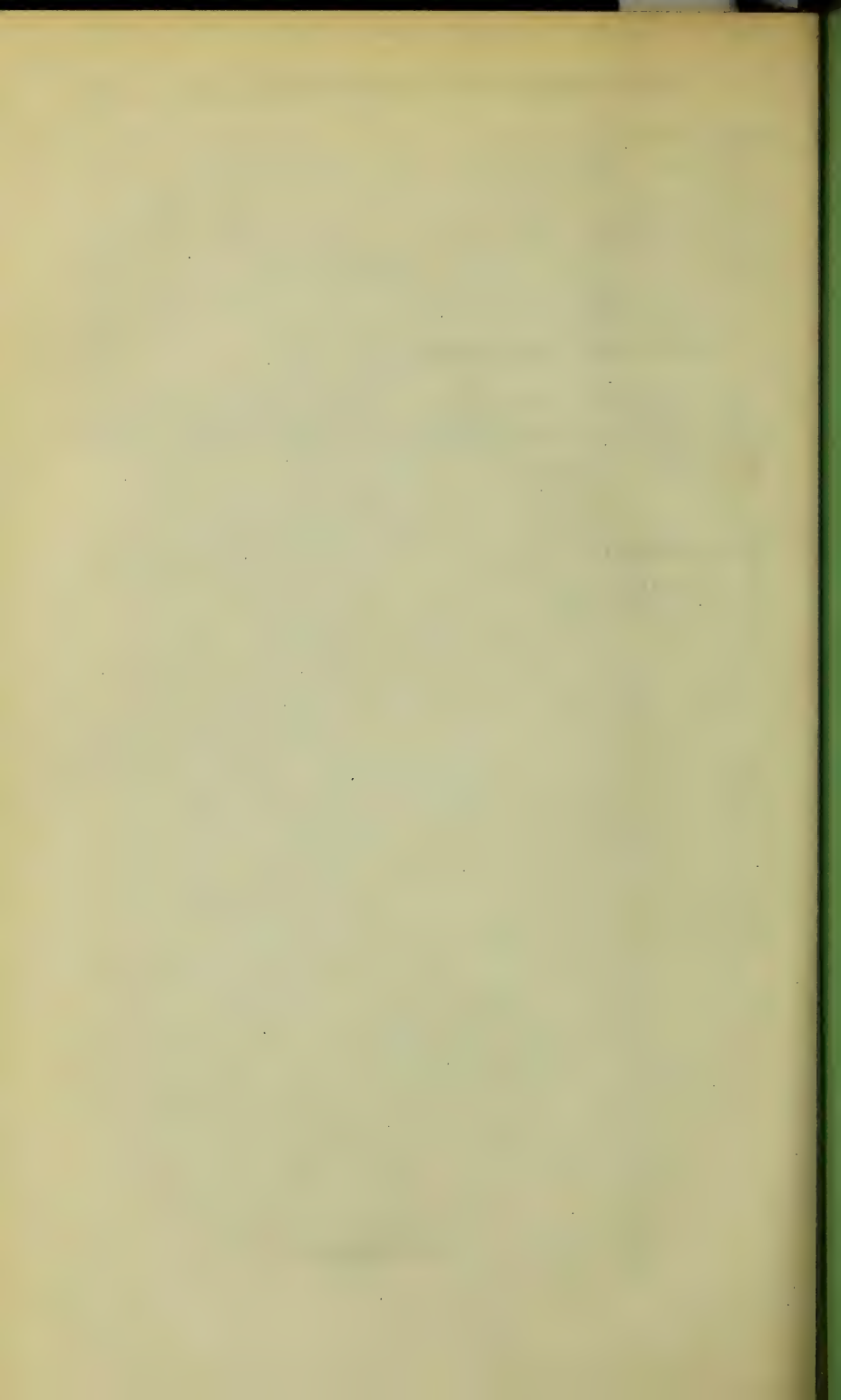
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